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THESIS

OF NASA AND NEANDERTHALS, ELEPHANTS AND MACHINES: METAPHORS AND THE CONCEPTUALIZATION OF HOMELAND SECURITY

by

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The homeland security enterprise is still struggling to find a sense of self: the common cause, common language, and common understanding. In effect, the homeland security culture is still elusive. This thesis explores the idea that metaphors can provide a means for conceptualizing, defining, and representing the homeland security enterprise. The use of metaphor encompasses elements of language, philosophy, psychology, and cognition, and therefore how a phenomenon, organization, system, or endeavor is comprehended depends on the metaphors that are applied to aid in that comprehension. To understand what roles metaphors currently play in the homeland security paradigm, a document analysis of seminal and subsequent homeland security writings was conducted in search of the metaphors employed to conceptualize the enterprise. The research found that homeland security metaphors are limited to simple words and/or phrases and no extended metaphors were employed. This thesis advances that metaphors are necessary for the conceptualization of phenomena in general and that there is a need to find and apply alternative and/or additional metaphors to comprehend the homeland security enterprise and culture.

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OF NASA AND NEANDERTHALS, ELEPHANTS AND MACHINES: METAPHORS AND THE CONCEPTUALIZATION OF HOMELAND SECURITY

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ABSTRACT

The homeland security enterprise is still struggling to find a sense of *self*: the common cause, common language, and common understanding. In effect, the homeland security culture is still elusive. This thesis explores the idea that metaphors can provide a means for conceptualizing, defining, and representing the homeland security enterprise. The use of metaphor encompasses elements of language, philosophy, psychology, and cognition, and therefore how a phenomenon, organization, system, or endeavor is comprehended depends on the metaphors that are applied to aid in that comprehension. To understand what roles metaphors currently play in the homeland security paradigm, a document analysis of seminal and subsequent homeland security writings was conducted in search of the metaphors employed to conceptualize the enterprise. The research found that homeland security metaphors are limited to simple words and/or phrases and no extended metaphors were employed. This thesis advances that metaphors are necessary for the conceptualization of phenomena in general and that there is a need to find and apply alternative and/or additional metaphors to comprehend the homeland security enterprise and culture.

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LIST OF DEFINITIONS

Analogy: An *analogy* is a comparison between two objects, or systems of objects, that highlights respects in which they are thought to be similar. *Analogical reasoning* is any type of thinking that relies upon an analogy. An *analogical argument* is an explicit representation of a form of analogical reasoning that cites accepted similarities between two systems to support the conclusion that some further similarity exists.[1]

Imagery or Mental Imagery: Varieties of which are sometimes colloquially referred to as "visualizing," "seeing in the mind's eye," "hearing in the head," "imagining the feel of," etc.; Is *quasi-perceptual experience*; it resembles perceptual experience, but occurs in the absence of the appropriate external stimuli. Generally understood to bear *intentionality* (i.e., mental images are always images *of* something or other), and thereby to function as a form of mental representation.[2]

Metaphor: A poetically or rhetorically ambitious use of words; a *figurative* as opposed to *literal* use. Some expressions of metaphors are:

- *explicit:* liken one or more named things or kinds to other named things or kinds by means of locutions regularly found in overt literal statements of identity, membership, or inclusion

- *implicit:* eschew simple alignments, mingling primary and secondary subject language leaving listeners able to work out what is being likened to what.

- *extended:* unitary metaphorical likenings that sprawl over multiple successive sentences.

- *contracted:* metaphors that run their course within the narrow confines of a single clause or phrase or word.[3]

Propositions: Refer to some or all of the following: the primary bearers of truth-value, the objects of belief, the meanings of sentences, and the sharable objects of attitudes (what is believed, doubted, etc.)[4]

Simile: A type of metaphor employed as an explicit comparison of one thing to another, built around *like, as,* or some other explicit comparative construction, for likening one thing to another.[5]

Utterance**:** A linguistic action performed by a certain speaker in a certain place at a certain moment. It has an ontological status of actions: each utterance is a unique historical event; it is a token, not a type; an utterance made by one speaker cannot be made by another one; an utterance made here and now cannot be made there and later. In Linguistics, 'utterance' is often used for the action of pronouncing

orally, but philosophers tend to also include writing, signing, and other modes of language use. In the view of many pragmatists utterances are the primary bearers of truth-conditional contents.[6]

DEDICATION

For Joan, my wonderful wife

Because of all of the reasons only she knows

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ACKNOWLEDGMENTS

I.   INTRODUCTION

> The opposite of a true statement is a false statement, but the opposite of a profound truth can be another profound truth[7]
>
> Niels Bohr

The Mars Climate Orbiter was launched in late 1998 and during its nine-month journey to the red planet, several minor propulsion maneuvers were conducted to adjust for significant increases in angular momentum. However, data for the angular momentum was computed in English units versus the metric units used for the rest of the project and the propulsion maneuvers injected small errors in the trajectory estimates. The National Aeronautics and Space Administration (NASA) engineers were grappling with what were essentially mathematical contextual problems and the cumulative result of these inaccuracies was a 170-kilometer mistake. Contact with the orbiter was lost on September 23, 1999, either to its re-entering heliocentric space or through its destruction in the Martian atmosphere.[8] Despite the fact that the obiter needed course corrections 10 to 14 times more frequently than was expected, it was presumed that the unusual positioning of a solar array was the reason and no other possible cause for this anomaly was considered.[9] A problem that might have been obvious to a non-scientist was masked by the "exact" problem of the physical configuration of the spacecraft.

In the long pre-history before *Homo sapiens* became a space-faring species, the arrival of modern humans moving out of Africa and into areas inhabited by Neanderthal[10] peoples led to the eventual extinction of the latter. In the absence of powerful natural selection pressures, the characteristics of a species may remain unchanged for a long time.[11] Nevertheless, while deeply entrenched in their survival strategies, Neanderthal forging tactics were not static, and about 55,000 years ago, they shifted to hunting strategies that focused on heavier game such as hoofed mammals. The Neanderthals were also able to tailor their tool-making to available resources, conserving material that was in short supply, and later began making sophisticated stone-tipped spears in certain parts of the Levant. The question of their capacity to adapt has been generally put to rest.[12] In contrast, the anatomically modern humans had a greater array of food acquisition

strategies and were behaviorally and cognitively more competitive.[13] The ability of Neanderthals to adapt rapidly enough to remain viable in the face of the invaders is not in doubt—the Neanderthals are extinct.

Tens of thousands of years later, on March 28, 1979, the Three Mile Island nuclear power plant suffered a series of mechanical failures. First, a cooling circuit pump malfunctioned, causing the number two reactor's primary coolant to heat and internal pressure to rise.[14] Control rods automatically dropped into the reactor to shut down the core. Next, an escape valve that opened to release pressure failed to close. With the valve open, coolant escaped through the pressurizer, sending false indications to operators that the coolant system was over pressurizing, even though the "close" command was displayed. Operators then shut down the water pumps to relieve the "pressure." This allowed coolant levels inside the reactor to fall, exposing about a third of the uranium core. Once operators realized what was actually occurring, they shunted superheated and partially radioactive steam to waste tanks through compressors and pipes. Lastly, the compressors leaked, releasing low-level radioactive steam into the atmosphere.[15]

The technicians of Three Mile Island, the engineers of NASA's Mars Climate Orbiter and even the Neanderthals would have benefited if they had been able to see the whole versus the sum of parts. John Godfrey Saxe's fable, *The Blind Men and the Elephant* describes six blind men groping at an elephant, each trying to explain the animal based on the different part of the beast that he encounters. Therefore, the elephant is likened to a wall, a snake, a tree, a rope, a fan, and a spear based solely on the sensations each man has as he touches the animal.[16] Yet, each man is unaware that the others are blind, so each insists that his is the only possible account of what an elephant is. From where they stood, not one of them could feel all of the elephant. The blind men are not even aware of their own sightlessness and if they were suddenly granted the power of sight while still standing within arm's distance, the sheer size of the animal means that no one individual could see it all (see Figure 1).[17]

Figure 1.   The Blind Men and the Elephant[18]

Comprehending a conceptual domain in terms of other conceptual domains is the role of metaphors. Each of the above examples: the loss of the Mars Climate Orbiter, the extinction of the Neanderthal peoples, the accident at Three Mile Island, and the blind men and the elephant are used to aid in understanding the concepts of problem identification, rate of adaptation, self-organized criticality, and scale and proximity, respectively. They are metaphors: instruments of inference that can transfer the physical to the non-physical[19] and allow the mind to understand abstract concepts by using more concrete concepts such as location, force, substances, etc.[20]   Metaphors are an *imaginative rationality* and important tools to at least partially comprehending that which cannot be totally comprehended.[21] Additionally, the metaphors that are applied to the phenomena being conceptualized play a role in how the phenomena is defined and organized. As multiple metaphors are employed, they produce a network of entailments (parts of the metaphor that fit and do not fit) and can bring forth a coherence of the

3

phenomena being conceptualized.[22] Perhaps the most powerful aspect of metaphors is that they can create new realities versus merely providing a vehicle for understanding those realties that currently exist.[23]

However, using metaphors to comprehend the world is not without perils. The models chosen for understanding space, time, substance, and causality that are embedded in language run counter to the precision of logic and physics sought by philosophers and psychologists in grasping the workings of human cognition.[24] And since metaphorical language is so pervasive, it is important to understand that the presence of a metaphor does not necessarily mean that a correspondence between a given metaphor and some conceptual model exists.[25] Not all human thoughts have some relevance to a physical experience.[26] Furthermore, not all users of metaphor have the same outcome in mind. Some metaphors are stringently designed for technical reasons, such as in science and mathematics while other metaphors are more poetic and open to interpretation. These literary metaphors are employed to convey richness, with the understanding such an emphasis will be at the expense of precision.[27]

The issues represented above by metaphors of NASA, Neanderthals, elephants, and machines point to problems similar to those faced by the homeland security enterprise. The orbiter example reveals that identifying the true nature of causal factors depends upon whether or not participants in an endeavor are aware that other explanations and contexts might exist. Moreover, the extinction of Neanderthal peoples demonstrates that despite best efforts to adapt, threat environments can simply evolve too fast for changes to have a meaningful effect. Furthermore, the Three Mile Island story exposes the far-reaching ramifications associated with the failure of minor components of complicated systems. The dual variables of the size of the elephant and the proximity of the blind men show that comprehension of phenomena can be limited by scale and perspective. However, as instructive as these metaphors are, metaphors can also be used in a manner that is far beyond the individual narrow examples above.

This thesis suggests that the metaphors currently used to conceptualize, define, and represent the homeland security enterprise are insufficient and lacking in variety. Comprehension of the enterprise can be improved through the adoption and application of additional appropriate metaphors.

A.   THE HOMELAND SECURITY CULTURE

It can be argued that homeland security has been with humankind for its entire existence. Once the first band of primordial humans discovered that someone staying awake to guard against predators and other night dangers made everyone was safer heralded the birth of homeland security. The concept of protecting one's home and those who dwell there evolved from that earlier time and followed a trajectory that encompassed the shepherdess watching her clan's flock, the medieval watchtower guard crying out whether or not all was well, and today's professional firefighter who is on duty 24/7.

Much like the catalysts in nature that spur natural selection, the catalyst of 9/11 prompted the next stage in the history of homeland security, and yet homeland security is a concept that defies definition. Considering the newness of the modern homeland security enterprise, it is not surprising that it is still struggling to find a sense of *self*: why is it here and what is its purpose.[28] The common cause, common language, and common understanding, in effect, the homeland security *culture*, is still elusive. Despite the absence of a definition, homeland security is still obviously practiced the by the same components that were doing so prior to the labeling of the enterprise as such. However, current homeland security professionals identify themselves as they did prior to 9/11: as firefighters, police officers, emergency managers, public utility workers, national guardsmen, intelligence analysts, etc.[29] Any embryonic homeland security culture or identity that does exist is not adhered to by its practitioners in the same way, and few people run around saying that they are "homeland security professionals" simply because the cultural identity necessary has not yet matured.

Among the many possible definitions proffered, homeland security enterprise refers to the:

...the collective efforts and shared responsibilities of Federal, State, local, tribal, territorial, nongovernmental, and private-sector partners—as well as individuals, families, and communities—to maintain critical homeland security capabilities. It connotes a broad-based community with a common interest in the safety and well-being of America and American society.[30]

Additionally, the absence of a common homeland security definition and common culture makes instituting doctrine difficult and without doctrine, there is no training—or worse, inappropriate or incorrect training. According to a 2012 Congressional Research Service report:

Policymakers are faced with a complex and detailed list of risks, or threats to security, for which they then attempt to plan. However, managing those risks 99% of the time with even a single failure may lead to significant human and financial costs. Homeland security is essentially about managing risks. The purpose of a strategic process is to develop missions to achieve that end. Before risk management can be accurate and adequate, policymakers must ideally coordinate and communicate. That work to some degree depends on developing a foundation of common definitions of key terms and concepts. It is also necessary, in order to coordinate and communicate, to ensure stakeholders are aware of, trained for, and prepared to meet assigned missions. At the national level, there does not appear to be an attempt to align definitions and missions among disparate federal entities. DHS is, however, attempting to align its definition and missions, but does not prioritize its missions; there is no clarity in the national strategies of federal, state, and local roles and responsibilities; and, potentially, funding is driving priorities rather than priorities driving the funding.[31]

To understand the homeland security paradigm, this thesis examines the metaphors used to conceptualize the paradigm, and whether those metaphors are outdated, insufficient, or are misapplied. How conceptual metaphors are employed leads to questions regarding language, philosophy, psychology, and cognition. For instance, not only is there a lack of a clear, simple, plain, and standard language used by the agencies, jurisdictions, individuals and interests in homeland security activities, there may also be entirely different interpretations of any (supposedly) standardized language that is in place. This thesis touches on some of the above topics, focusing primarily on

the conceptualization of phenomena through metaphors in general, and the need to find and apply alternative and/or additional metaphors to the existing homeland security enterprise and culture.

B.   METAPHORS AND LANGUAGE

1.   Metaphors

In *Metaphors in Mind: Transformation through Symbolic Modelling*, James Lawley and Penny Tompkins claim:

> Our metaphors are like thread which weaves together to create a continually unfolding tapestry—the fabric of our existence. They are so fundamental, pervasive and embedded in thought, word and deed that they tend to remain out of our awareness. As we become aware of the way metaphors define our experience, we open up the possibility for a transformative shift in the way we perceive ourselves and our world.[32]

The ways in which one looks at the world are shaped by the metaphors one uses to understand it, and it also involves how metaphors themselves are comprehended. Human beings' ability to conceive important concepts is typically not due to direct experience with those concepts but from the application of other experiences to the intangible.[33] There are two main schools of thought here: the literalist school and the contextual school. Literalists believe that language should be distilled down to its barest components—absolute meaning is conveyed in the simplest terms possible. It should be as close to mathematical formulae as can be attained and any other forms of expression that detract from the reduced form are mere embellishments, ornaments, and literary tools. They are nice but unnecessary.[34] Even though analogies and models are used in scientific and mathematical explanations, any meaningful analogy may also turn out to be a false description and so the use of a scientific model is to underline its intelligible, not its metaphorical, character.[35]

In contrast, proponents of the contextual school take the opposite view. They claim that since the world is such a complex place, it is impossible to communicate without some reference points for the participants in the communication.[36] People do not simply use metaphors to understand one experience or concept in terms of some previous

comprehension in their existences, rather they are able to generate additional metaphors from a family of tropes related to metaphors that are implicit[37] and that they may take for granted. There is a case for sense-making as well as conveyance of meaning, and it is achieved through expressions that are not directly involved in language reduced equations.

How a phenomenon, organization, system or endeavor is comprehended depends on the metaphors applied to it to aid in that comprehension. For example, if an organization is understood as a machine, then those comprehending it as such will anticipate that it acts like a machine, is operated like a machine, and it is expected to perform machine-like functions.[38] It communicates as would a literalist: in a machine-like, mathematical fashion. The organization metaphorically understood as a machine may be an efficient communicator in the context of other machines but it may prove unable to communicate in a more elaborate fashion. On the other hand, if an alternative metaphor is applied to the conceptualization of a phenomenon, such as the homeland security enterprise, the manner in which it communicates will be different as well. Given the metaphor in which they operated, it might be supposed that the NASA engineers, educated in the literalist tradition, could not fathom the kind of problem they faced. Being products of a machine metaphor, they could not "evolve" out of their assumptions of what necessitated the course corrections. The engineers were reduced to looking at the elephant through a jeweler's loop while not even aware that they were doing so.

In *The Structure of Scientific Revolutions*, Thomas Kuhn argues that for theories to be displaced, new explanations have to be offered; that ill-fitting elucidations will remain fixed until better iterations are advanced and accepted.[39] Rather than advance new ways of thinking, though, the usual works of scientists is to "mop-up" the details of already accepted broad theories and not challenge the status quo of mature sciences.[40] Kuhn also points out that definitions of whether or not a field is be considered a science may not be as important as the discipline's practitioners achieving consensus about their past and present accomplishments.[41] However, this thesis holds that Kuhn's arguments regarding definitions of mature or "normal" sciences do not have complete applicability to the homeland security realm. Whereas other fields have established themselves and

defined their respective purposes, homeland security does not yet have a history independent of its component entities. The story and development of the homeland security enterprise thus far make it subject to Kuhn's assertion:

> In history, philosophy, and the social sciences, textbook literature has a greater significance. But even in these fields the elementary college course employs parallel readings in original sources, some of them the "classics" of the field, others the contemporary research reports that practitioners right for each other. As a result, the student of any one of these disciplines is constantly made aware of the immense variety of problems and the members of his future group have, in the course of time, attempted to solve. Even more important, he has constantly before him a number of competing in incommensurable solutions to these problems, solutions that he must ultimately evaluate for himself.[42]

This statement is critical to examining the form the homeland security culture has and should have. Whatever system or design for the homeland security enterprise is deemed preferable, the problems of the group will be orienting homeland security in line with that system or design before it becomes entrenched as a mature "science" (even before it knows what it is).

In *Homeland Security: An Aristotelian Approach to Professional Development*, Philip J. Palin points out that in the learned professions of the priesthood, law and medicine, professional education did not just include developing the skill set of the profession but also focused on the professional ethos. Historically, these professions have been distinguished by three tightly linked characteristics:

1. An extended period of education and apprenticeship focused on mastery of a shared body of literature and way of thinking.
2. Those successfully completing education and apprenticeship have professed a self-sacrificing commitment to serving society, abiding by shared principles of ethical behavior, and advancing transcendent goals
3. Substantial freedom to self-organize and self-regulate as a community of professionals.[43]

All of these characteristics emphasize the shared nature of knowledge and a sense of professional community. Developing the homeland security culture through the

application of new metaphors and adopting the attendant language is similar to the concept of "cultural literacy," which was put forth by E. D. Hirsch, that holds:

> Cultural literacy is the ability to understand specific and informal content that create and constitute a dominant <u>culture</u>. Literacy demands an acquaintance with the culture that cannot be attained through the mere knowledge of a canonical set of literature. To fully engage with others in a society, cultural literacy requires familiarity with a broad range of collective and <u>general knowledge</u> and implies the use of that knowledge in the creation of a communal language.[44]

Ultimately, homeland security practitioners must have the reasoning skills and capabilities to function in an environment of complexity and uncertainty. As Palin points out, "…homeland security professionals should be able to helpfully frame the situation, explicate the context, and probe for innovative approaches to engage the ambiguity," especially when the experience and knowledge of experts is stymied.[45] The adoption of an alternative metaphor(s) is critical to the creation of the homeland security ethos that can succeed and thrive in a dynamic environment. This is because situations where increased cooperation, collaboration, and cohesion are desired, such as in the discipline of homeland security, the language generated as a result of the metaphor(s) used can be a unifying force.

2.   Language

Language is one the most immediate methods by which a person determines if another individual is in the "in-group" or the "out-group" because in a variety of situations, individuals engage in different linguistic codings.[46] These codes are a result of the degrees of commonality of the participants' interests and characteristics. Shared domains of linguistic meaning do not need to be constantly re-defined or repeatedly made explicit and, therefore, produce a specialized language code that restricts its comprehension outside of specific situations. The use of such restricted language is a feature of a social class system that limits some individuals' access to the linguistic code. Other circumstances, such as interactions between groups, require a more universal linguistic code that may have to be overtly defined to relieve ambiguity and to articulate distinct elements of personal experiences.[47]

This phenomenon is not just linguistic in nature; it is a means of making institutional distinctions as well. Knowing the language of one's profession is a key component for one's position as a member of that profession. This is supported by Berger and Luckmann's assertion:

> Language objectivates the shared experiences and makes them available to all within the linguistic community, thus becoming both the basis and the instrument of the collective stock of knowledge. Furthermore, language provides the means of objectifying new experiences, allowing the incorporation of the already existing stock of knowledge…[48]

Verbal language is a key characteristic of the human race and how people use language defines them as individuals.[49] However, in the homeland security realm, many professional linguistic impediments of jargon, code phrases, acronyms, and abbreviations have been put in place by the practitioners themselves. Whether this is intentional to maintain the in/out status of individuals and organizations, or if it is due to a simple resistance to change as a kind of vestigial language, or if it is due to a lack of recognition of how detrimental such behavior can be is all irrelevant. In *Metaphors of the Field: Varieties of Organizational Discourse*, Peter K. Manning holds that how language mediates between the world and perceptions of the world is worthy of exploration because organizations are not concrete; they cannot be usefully seen as a single object. Therefore:

> Methodological analysis must discover discourse. Styles of discourse must be examined as they play roles in the gathering and analysis of field data. These styles or tropes are central to literary or textual analysis. Social analysis involves both creating and analyzing texts.[50]

C. METHODOLOGY

1. Research Question

Given the disparate missions and perspectives of stakeholders, what contributions can representative language (e.g., metaphor, analogy, imagery, and simile) make for the creation of an overarching homeland security definition?

- Does an analysis of such language used in homeland security documents and other works in the discipline determine which metaphors will best serve this purpose?

- What is the frequency of representative language usage in selected texts?
- Do certain types of representative language e.g., extended metaphors, analogies, similes, images, and ontological, structural, synecdoche, and/or metonymical metaphors, appear more often than others. In which category of documents do they appear?

To answer these questions, this study analyzed the use of metaphors in homeland security related documents.

a. Hypothesis

A workable definition of homeland security is lacking because the homeland security enterprise is not communicating in a language typically used by entities more open to innovation. Homeland security professionals face contextual challenges in understanding the nature of homeland security. To help homeland security professionals overcome these obstacles, metaphors can be employed, much as they are by innovative business and entrepreneurial thinkers, to bridge organizational language and cultural differences.

b. Premise

Persons not having a common culture (e.g., knowledge, ideals, and suppositions) can have difficulties reaching mutual understanding. A novel event, for which no pre-determined classification is available (such as the creation of the homeland security enterprise), produces a need to seek resemblances to more familiar features or concepts. Such resemblances can be expressed through representative language and the

novel event named and communicated with metaphors.[51] The metaphors selected for the novelty presuppose certain elements; metaphors will highlight similarities and tend to minimize differences.[52]

Therefore, if homeland security cannot be precisely identified in purely objective terms, then the metaphors that are employed in homeland security writings and the contexts in which they are used will have implications for understanding and defining homeland security.

This study used a qualitative document analysis in two stages to uncover metaphor usage by frequency and by type. Documents analyzed were in two categories associated with homeland security: Seminal documents generated since September 11, 2001 and subsequent writings that attempt to describe and/or explain the homeland security enterprise. The works selected were those that represent the enterprise as whole.

2. Document Analysis

a. *Selection of Documents Analyzed*

Documents that have been instrumental in the formation of the homeland security enterprise and those listed in the methods section of the previous chapter acted as a type of control group. Metaphors in these documents were found to be limited to single references rather than extended metaphors.

The selection of the subsequent homeland security documents for analysis was made on two criteria: to span the last eight years and to those papers with metaphorical titles and/or had the words or phrases or words in their titles as they relate to homeland security. Works were drawn primarily from the Congressional Research Service, the *Journal of Homeland Security Affairs*, and similar political science periodicals.

b. *Formative Documents*

The federally generated homeland security documents analyzed were: The National Strategy for Homeland Security (2002), The National Strategy for Homeland Security (2007), The Quadrennial Homeland Security Review, Crisis Response and Disaster Resilience: 2030, and Secretary of Homeland Security Janet Napolitano's 2nd Annual Address on the State of America's Homeland Security.

c. *Subsequent Documents*

Academic papers that have attempted to define or describe homeland security from political science and homeland security peer reviewed publications included: *Does Homeland Security Exist Outside the United States?* by Nadav Morag,

Managing Risks in the Age of Terror by Paul Shrivastava, *Defining Homeland Security: Analysis and Congressional Considerations* by Shawn Reese, and *Homeland Security Hash* by Paul C. Light.

d.   Coding of Metaphors

Originally, this thesis sought only extended or complex metaphors, those that used several words or phrases to expand upon how a metaphor would be applied to the homeland security enterprise. However, in the first stage of the research, a paucity of extended metaphors in the seminal documents required adjustments to the coding criteria for the subsequent writings. In the second stage of the research, the criteria were tightened in order to produce a richer data set.

The stricter criteria included coding for

1.   *Analogy*. An analogy is a comparison between two objects, or systems of objects, that highlights respects in which they are thought to be similar.[53]For example:

- Most <u>people behave like sheep</u>; they will allow themselves to be led against their own best interests.

- <u>Politics</u> is <u>Hollywood </u>for<u> ugly people</u>

2.   *Imagery*. Imagery is a *quasi-perceptual experience*; it resembles perceptual experience, but occurs in the absence of the appropriate external stimuli; functions as a form of mental representation.[54] For example:

Her spirit is on a <u>mountain top.</u>

- The classroom was an intellectual <u>waste land.</u>

3.   *Simile*. This is a type of metaphor employed as an explicit comparison of one thing to another, built around *like, as,* or some other explicit comparative construction, for likening one thing to another.[55] For example:

- The realization hit me like a bucket of cold water.

- I was as dumb as a post.

4.   *Extended metaphors*. Extended metaphors are explanations or extrapolations of the metaphor used; unitary metaphorical likenings that sprawl over multiple successive sentences. These can be technically

explanatory, such as describing gas molecules in a vessel in terms of billiard balls on a table, or poetic devices such as:

- But soft! What light through yonder window breaks? It is the east, and Juliet is the sun. Arise fair sun, and kill the envious moon, who is already sick and pale with grief…[56]

Once all texts were examined and their metaphors coded, the results were tabulated according to kind, frequency and document in which they were found. The results were analyzed to detect trends in similarity and identify patterns.

e.   *Output*

The data demonstrated that representative language is used for explaining/describing complex concepts such as homeland security but only in an extremely limited sense. The absence of extended metaphors, though, suggests an opportunity to discern what metaphors are implied, offer alternative applications of those implied metaphors, and to advance alternative metaphors and applications. However, the metaphors chosen and applied have advantages and disadvantages and those benefits and drawbacks will be offered as each metaphor or application is put forth.

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II. REVIEW OF LITERATURE

Mystery creates wonder and wonder is the basis of Man's desire to understand[57]

Neil Armstrong

When bringing the scholars and policymakers from across the disciplines in the homeland security enterprise together, it will require a common language and culture to achieve understanding. However, there is as yet no common history or language that bonds the stakeholders and there is nothing concrete to describe, explain or define. Metaphors can cut across the linguistic divisions among stakeholders that are created by the various perspectives, contexts and lenses by which they view the homeland security enterprise.

Metaphors touch upon nearly every aspect of language and meaning. Therefore, an exhaustive review of literature surrounding metaphorical language would be unwieldy, and it would not serve the purposes of this thesis. In order to avoid becoming entangled in semantic inquiry, this literature review relied upon two thorough summations of metaphor theory for background information on the linkages metaphors have to other fields of study. However, an overview of general semantics was also consulted.

Metaphors represent one of the rare instances where descriptions and definitions must include the concept being described and defined. All literature reviewed followed this premise and used examples of metaphors as part of their explanations. The definitions of metaphors, analogy, imagery and simile were offered in the previous chapter.

A. MEANING

The overview of semantics, John Lyons' *Linguistic Semantics: An Introduction*, served as the primary semantics resource for this thesis. This book is a comprehensive work that touches on all aspects of semantics, with fair attention and consideration paid to most of the field's major perspectives.[58] It also reviewed the elements of semantics

that interact with philosophy and psychology. Lyons presents the several of the major philosophical theories that attempt to answer the semanticists' foremost question, *what is meaning?*[59]

- **referentia**l or **de-notational** theory—the meaning of an expression is what it refers to, denotes, or stands for (e.g., 'Fido' means Fido, 'dog' means either the general class of dogs or the essential property, which they all share)

- **ideational** or **mentalistic** theory—the meaning of an expression is the idea, or concept, associated with it in the mind of anyone who knows and understands the expression

- **behaviorist** theory—the meaning of an expression is either the stimulus that evokes it, the response that it evokes, or a combination of both

- **meaning is use** theory—the meaning of an expression is determined by, if not identical with, its use in the language

- **verificationist** theory—the meaning of an expression is determined by the verifiability of the sentences or propositions; it is possible that the expression has no meaning

- **truth conditional** theory—the meaning of an expression is its contribution to the truth conditions of the sentence[60]

None of these theories is an all-encompassing theory of linguistic semantics but each comprises a piece of the background assumptions necessary in the creation of such a theory.[61] The importance of metaphors in each of these theories is that, "... metaphorical creativity (in the broadest sense of 'metaphorical') is part of everyone's linguistic competence.[62]

B.   TWO SCHOOLS OF THOUGHT

An overview on metaphors by David Hills, published in the *Stanford Encyclopedia of Philosophy*, provides a useful description of the various types of metaphors while offering a historical perspective on the value of metaphors in communication, from Aristotle to the present.[63] Hills points out that there are currently two general schools of thought regarding metaphors and each of these approaches looks to properly treat the context-sensitivity of metaphor use: the literalists and the

contextualists.[64] The debates surrounding proper metaphor usages encompass, not just semantic and linguistic elements, but also what metaphors ultimately represent in the development of the human mind, society and culture.[65]

Hills outlines how the literalists believe that the verbal bearers of truth values, called situating parameters are disambiguated and few. In addition, the current values of these situating parameters, while mutable even during the course of a single dialogue, are constantly discernible as a "well-run conversation" progresses. The participants' mutual understanding of and abilities to accurately recognize and react to those changing values is necessary at all stages of the conversation. The most important of these situating parameters is what is realistically presupposed.[66] Hills also provides an précis of the contextualist school (outlined below).

The second summation is a series of overviews by C. John Holcombe and published in Text Etc., a website dedicated to the craft and theory of poetry. These works touch on metaphor theories, analytical philosophy, linguistics and theories of meaning. In them, he outlines that literalists are typically scientists, logicians, and lawyers who stress the exact and plain meanings of words in their quest for objectivity and clarity.[67] These professionals regard metaphor as mere ornamentation. In scientific usage, stylistic tools, such as metaphor and analogy, are muted and what descriptive language that exists borrows from inert and mechanical concepts.[68]

Holcombe cites Nicholas Fotion's *Logical Positivism* and instructs that the literalist camp looks to distill language down to its barest meaning. In Logical Positivism, sentences are only statements of fact or rely on the meaning of words in them. Any other sentences appeal to emotion and have no intellectual content. While Logical Positivism is no longer generally accepted its legacy has been the continued attempt by some philosophers and linguists to understand language in its most basic and objective form.[69]

The contextual school of metaphor is represented in *Metaphors We Live By*, authored by George Lakoff and Mark Johnson. The authors point out that since the Greeks, the fields of linguistics and philosophy have relegated metaphors to the margins of examination. They hold that to study metaphors, a simple revamping of existing

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theories would not suffice.[70] They rejected the notions of a decipherable objective and absolute truth and suggested an entirely new approach. Lakoff and Johnson have produced a seminal work on the ubiquity of metaphors and how metaphors cannot be comprehended independent of some experiential basis.[71] Their work organizes metaphoric language into categories of experiences: orientation, sensual, containers, landscapes, etc. Besides the concrete metaphors they offer, they introduce the idea of the conceptual metaphor (e.g., love is a journey, argument is war, etc.). Conceptual types have at their cores, basic engagements with the physical world.[72]

Steven Pinker's *The Stuff of Thought: Language as a Window into Human Nature* supports Lakoff and Johnson's assertion that the tradition of Western thought since the Greeks has been basically misconceived and that in the absence of objectivity, all that remains is a series of competing metaphors. Yet Pinker does not agree with Lakoff and Johnson entirely and believes their conceptual metaphor theory overreaches. Pinker points out that the contextual school ignores the predictive reality of science and mathematics.[73] This does not mean that metaphors are useless any more than implying that objective knowledge and truth are obsolete. Ultimately, Pinker disagrees with the literalist school in that Lakoff and Johnson's conceptual metaphors are more than just "literary garnishes" and they are indeed tools for reasoning—just as long as one doesn't take the idea too far.[74]

In summary, the contextualist school, as defined by Lakoff, Johnson and other linguists and philosophers, looks at a near infinite number of meanings in the use of metaphors. That is, the codified approach advocated by literalists cannot account for the nuances and complexities that exist due to the various experiences, reference points and schema that speakers and listeners possess when conversing.

C.   EXTENDED METAPHORS

Extended metaphors are single metaphors that are explored at length: rather than simply referencing it and moving on, the user expounds on the metaphor. Examples of extended metaphors are found in Gareth Morgan's *Images of Organizations*,[75] where comparisons between various systems are made with respect to how organizations are

constructed. The power of this work is that, rather than just announcing similarities, Morgan provides how the similarities in a given metaphor relate to one another and where the metaphor simply does not or cannot apply. And that, over time, the advantages of one kind of metaphor may be offset by its disadvantages. According to Morgan, seeking understanding through metaphor demands that one recognize the limiting and distorting effects the chosen metaphor will have on that understanding and that because of these limitations, there cannot be one true and "correct theory."[76] Additionally, Morgan offers evolutionary perspective where the metaphor in question developed in the prevailing mindsets and theories of the time.

The book, *Strategy Safari: A Guided Tour through the Wilds of Strategic Management*, by Henry Mintzberg, Bruce Ahlstrand, and Joseph Lampel performs much the same as *Images of Organizations* but instead examines not the structures but the functions of organizations. Organizational strategy is portrayed as various metaphorical schools such as the planning school, the environmental school, the design school, etc. Some of these schools are prescriptive while the majority of them are descriptive. Again, the authors strive to provide the positives and negative of each type through case studies and historical perspectives. The authors end with a comprehensive view that, like Morgan, holds that there is no one correct approach—it is not the type but the narrowness of the type that is the constraint.[77]

Almost as a side note, Mintzberg et al. refer to Charles Darwin's distinguishing "lumpers," those who like to dice up the situation into neat categories, from "splitters," those who prefer to keep multiple variables isolated.[78] The value of this reference is that when comparing the literalist and contextual schools vis-à-vis metaphor use, or any debate along a spectrum for that matter, the lumper/splitter image is applicable. The lumper will disregard significant differences in order to limit the number of categories while the splitter will accentuate small distinctions as a basis for making larger ones.[79]

The document analysis research for this thesis sought extended metaphors in a technical, explanatory form, similar to the metaphors that Morgan and Mintzberg et al. used in their work. A variety and large number of single metaphoric words were uncovered but extended metaphors were not present. The few multiple word metaphors

found were more "flavorful" than descriptive. The value of extended metaphors is discussed more in Chapter III.

D. SUMMARY

When different disciplines must work together toward a common goal, unique professional languages and jargon can be a hindrance. When looking at metaphors as a solution, though, one can become enmeshed in trying to determine what the specific metaphors used actually mean. Any application of metaphors must include detailed descriptions of what is being communicated until the metaphor becomes entrenched in the language and culture of the homeland security enterprise.

III.   THE CASE FOR METAPHORS

Those things which I am saying now may be obscure, yet they will be made clearer in their proper place[80]

Nicolaus Copernicus

A.   WHY METAPHORS WORK

Most aspects of language are saturated with metaphors,[81] but they are not just contrivances for literary embellishment. They provide a means of seeing and thinking about the world[82] Human beings' normal conceptual systems are permeated with metaphors because many important concepts are either intangible or too difficult to explain based on an individual's normal experience. To get a hold on such notions as emotion, ideas, time, etc., people use other concepts that they comprehend in clearer terms, such as spatial orientations and objects.[83]   These clearer and more concrete experiences permit people to construct more intricate and abstract ideas[84] meaning that a person's familiarities with some experience serve as a basis for understanding entire domains of other experiences. But what does that mean?   What is a basic domain of experience?

Such domains are those that contribute to an experiential gestalt, that is, they characterize structured and coherent wholes with in recur in human experiences. They are wholes of natural dimensions (parts, stages, causes, etc.). Domains of experience, of gestalt, come to people as natural kinds of experience;[85] however, some kinds of "natural" experience are actually generated by humans. Some may be universal, while others will vary among cultures[86] and, "The most fundamental values in a culture will be coherent with the metaphorical structure of the most fundamental concepts in the culture."[87]

To uncover what are universal domains versus culturally structured domains, Lakoff and Johnson look at three features of metaphors: *Systematicity, grounding, and coherence/consistency.*

1.   Systematicity

Systematicity is how aspects of various metaphors are highlighted and hidden. Those features of one experience being applied to understand another experience are given more weight than elements that do not "fit" as well. These latter facets are often hidden or disregarded in an attempt to make sense of the phenomena.[88] This is because metaphors are intrinsically partial—they cannot completely and accurately describe everything to which it is being applied.[89]

Since this is the case, how seriously can one take metaphors? If they are essential to comprehension, and not mere embellishments, then it is not only those components, the positive analogy that should be considered. It is also in the understanding that there is a negative analogy to be reckoned with that will break down the model at some point. Any extrapolation from the positive analogy must carry the extrapolation of the negative as well. Otherwise, it becomes distorted and misleading.[90]

2.   Grounding

Grounding distinguishes between an individual's experience and how that experience is conceptualized. While non-physical experiences that are mental, cultural, emotional, etc., are just as "real" to a person, it is physical experiences that are more clearly delineated. People conceptualize the less tangible in terms of the more tangible and physical experience. For instance, the sentence, "Harry is in the kitchen" is a direct physical (spatial and orientational) concept. But the utterances, "Harry is in the Elks," or "Harry is in love," are metaphorical in nature. The preposition "in" has grounding from the spatial and orientational and is generally understood as such, even if those speaking or writing may not be aware of it.[91]

3.   Coherence/Consistency

Coherence/Consistency are defined by the requirement to have metaphors "fit" together. When using more than one metaphor to describe phenomena or ideas, they may describe different aspects but no one metaphor can do the job by itself. However, there

must be some overlap among them to avoid a confusing mixed metaphor. Using "an argument is a journey" and "an argument is a container" as examples:

> Journey—the argument has *direction* and *progresses toward* a goal; an argument can be *followed,* a listener can be *led to* a conclusion.

> Container—the argument has *content, boundaries,* and *density*; an argument can have a *core,* it can be *confined to* a certain topic.

These metaphors can be consistent when viewed together: as the argument *progresses* (journey), it is on a *path* (container). The argument *covers* (journey) more *ground* (container). However, while *direction* and *content* or *path* and *core* may be invoked as coherent points of each metaphor, they are not consistent when one tries to speak of the *direction* of the *content* or the *path* of the *core*.[92] Complete coherence is typical of different metaphors, and it is fairly normal since more than one metaphor can be used to partially describe phenomena or ideas. Consistency across metaphors is, on the other hand, a rarity.[93]

Metaphors are not just limited to isolated concepts.[94] Metaphors are so pervasive that non-metaphorical terminology that describes or explains abstract ideas are difficult to find.[95] Lakoff and Johnson summarize with, "Once we can identify our experiences as entities or substances, we can refer to them, categorize them, group them, and quantify them—and by this means reason about them."[96]

B.   EXAMPLES OF METAPHOR TYPES

1.   Ontological

Ontological events, activities, emotions, ideas, etc., are portrayed as entities and substances[97]

Entity:
- Inflation is destroying our standard of living.
- Here comes trouble.

Substance (quantifiable):
- There was a lot of good running during the race.
- Her level of stress is low.

2.   Structural

Structural concepts are depicted in terms of another concept[98]

- Time is money.
- Religion is the opiate of the masses.
- Love is a game

3.   Synecdochical

Synecdochical a part representing the whole[99]

- We need strong bodies for the team (strong people)
- The car is clogging the highways (the aggregation of cars)
- The university has some good heads in charge. (intelligent people)

4.   Metonymical

Metonymical the use of one entity to refer to another that is related to it[100]

- She reads Shakespeare. (Shakespeare's works)
- The Times hasn't arrived yet. (The Times' reporter)
- They are in education. (The education profession)
- She's just a pretty face (the face represents the entire person)
- Personification

Personification non-physical objects and entities specified in terms of human activities, motivations, and characteristics[101]

- Life has cheated me.
- Worry consumed him.
- Love saved her.

The orderly character of concepts defined metaphorically is through a number of different metaphors (e.g., time is money, time is a moving object). Because concepts are metaphorically structured in a systematic way, such as "theories are buildings," it is possible to use expressions from the domain of buildings to refer corresponding concepts in the metaphorically defined domain of theories. Thus, one can refer to the "construction" or "foundation" of a theory. The details of how the metaphorical concept is applied to the theory will, in effect, structure the concept of the theory.[102]

Gale Richard Walker advances the notion of "metaphor maneuver" in his book, *Essentialism: A Hierarchical Theory of Epistemology.* The metaphor maneuver is the human mind's way of toggling back and forth between inductive and deductive thinking: it changes fact into fiction-like things and fiction into fact-like things. It happens so rapidly that people are not cognizant that they are doing so, and it transfers one's sense of reality between levels.[103] (See Figure 2.)
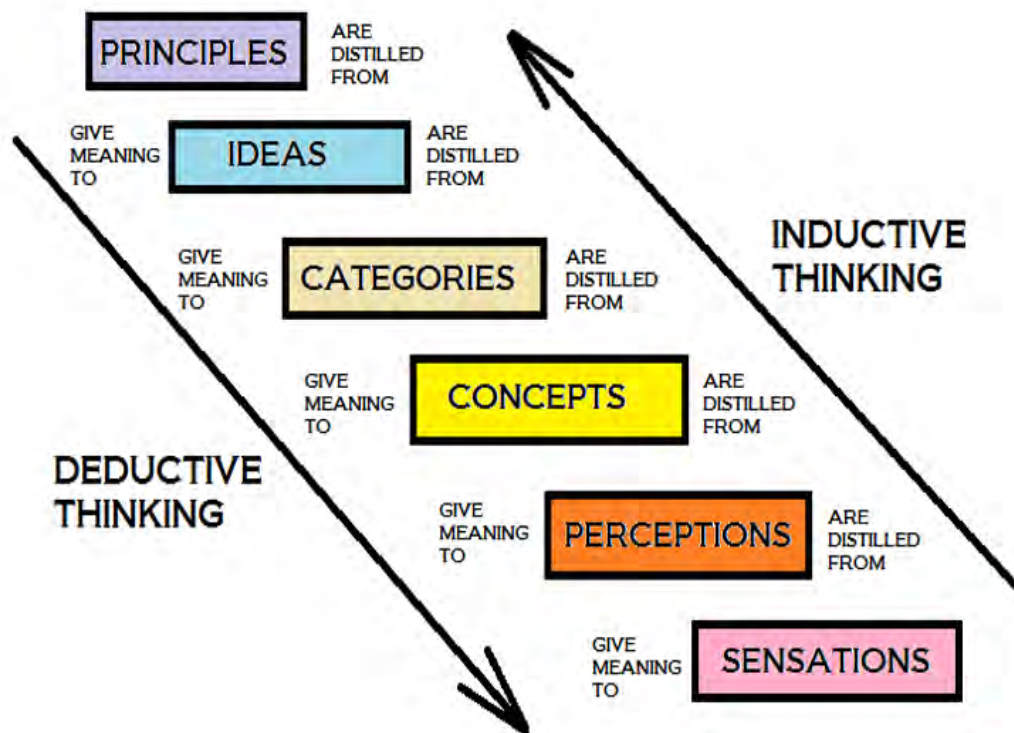
Figure 2.   Stairsteps of the Mind[104]

In Figure 2, Walker looks at each level as springing from those below while deriving meaning from those above and the metaphor maneuver provides the mental mechanism for doing so, especially between categories and concepts.[105]   According to Walker, concepts are the physical realm, such as "the Moon," earth's only natural satellite, whereas categories are intangible and exist only in the consciousness, such as "moonness," the essential attributes of all moons.[106]

Morgan argues that *all theory is metaphor* and that this has considerable ramifications.[107] That is, metaphors can expand creative ability to view the world but not without an inherent paradox in their nature: while they can improve our way of seeing they can also distort and become a way of not seeing. Using metaphors to understand phenomena promotes the similarities between the metaphor and phenomena but tends to ignore or downplay the differences. And any metaphor employed, no matter how precise, will fall short in that it can be biased, partial, and deceptive.[108] A metaphor that completely and accurately describes a phenomenon in all possible ways is not a metaphor—it is the phenomenon itself.[109]

Over time, metaphors tend to lose their quality of representativeness and start being regarded as literal expressions. Unless there is constant referral to the metaphor *as* a metaphor, once its function as a sense making device is completed, metaphoric language, even artistic expressions may become reified.[110] Such metaphors are the regarded as "dead metaphors:" they have been used often enough and in a sufficient variety of contexts that they stand on their own as a part of the language. Speakers no longer consider the metaphorical nature of a word or phrase and the metaphor is rendered a "semantic fossil."[111] The staying power of dead metaphors even resists improvements in understanding of the original metaphor.

As an example, Neanderthals, for a long time after their species was discovered, were considered human ancestors with no symbolic or language capacity. In addition, they were thought to be brutish, unintelligent creatures. However, as more and more anthropological evidence is acquired, it is becoming increasingly apparent that Neanderthals, while not having as rich a culture as modern humans, did develop a reasonably sophisticated culture prior to their extinction. Furthermore, even though Neanderthals died out soon after modern humans arrived on the scene, their tenure on the planet still surpassed that of modern humans to date.[112] Yet, from a metaphorical standpoint, to refer to someone as a "Neanderthal" still conveys a picture of a dim-witted, club-dragging, semi-human. This metaphorical expression, even though it has not kept pace with the image upgrade the Neanderthals have secured among paleoanthropologists and the scientific community,[113] still makes sense in English language usage. Because an

addressee of an utterance of the dead metaphor recognizes the contextual appropriateness on the basis of cultural or social circumstances and can forego the deductive steps mentioned below in the following semantics section, he or she accepts the metaphor as such and determine that a literal translation is not necessary.

At the other end of this argument, is the notion that humans can really only *think* about that which is physically experienced through interaction with their environment and respective cultures. In this case, all of the other unlimited thoughts of which human beings are capable are metaphoric references to these few primary concrete situations but applied to the abstract and non-experiential.[114] Most traditional perspectives on metaphors view them as mere linguistic contrivances to describe the physical world—that the words chosen do not alter what is real. However, the theory that metaphors actually create reality and structure conceptual systems incorporates not just the tangible thing being described, but the human perceptions, actions, motivations, etc., that constitute human experiences with the physical world.[115]

C.   DISADVANTAGES OF METAPHORS

Even though metaphors have the power to frame strategies, it is important to understand their limitations because while metaphors can open up thinking, their use can also oversimplify and narrow.[116] Humans have a natural tendency to look for instances that confirm understanding of the world by using past instances to corroborate their theories and regard them as *evidence.* Successes are emphasized over failures.[117] Disagreements arise because people frame problems by using different metaphors of which they are unaware.[118] Therefore, participants in communication must dissect implied metaphors to differentiate and expose what is metaphorical and the concept to which the metaphor refers.[119]

Additionally, the metaphors chosen to aid in the comprehension of phenomena have entailments that are intrinsic to those metaphors. For instance, metaphors have a tendency to create realities for people—especially social realties—and therefore they can

guide future behavior. These behaviors will most likely be in line with the metaphor and consequently reinforce it. The metaphor-behavior interaction becomes a self-fulfilling prophecy.[120]

The systematicity of metaphors used to explain phenomena is also subject to "narrative smoothing" described by Donald Spence in *Narrative Smoothing and Clinical Wisdom* as:

> a largely narrative account which attempts to tell a coherent story by selecting certain facts (and ignoring others), which allows interpretation to masquerade as explanation, which effectively prevents the reader from making contact with complete the complete account and thereby prevents the reader (if he so chooses) from coming up with an alternative explanation…There is a kind of selective reporting which uses the clinical material to exemplify a particular principle or axiom; anecdote is chosen for the illustrative power, and for its ability to further the argument.[121]

Spence also states that narrative smoothing can also result from a disregard or lack of awareness of varying perspectives of conversational participants:

> By failing to provide the background information and context surrounding particular clinical event, by failing to "unpack" the event in such a way that all its implications become transparent, the author runs the risk of telling a story that is quite different from the original experience. This kind of narrative smoothing comes about because we fail to realize that the facts are not fixed, that the referents are never unambiguous, and that each reading will depend upon the preconceptions and prejudices of the reader. This kind of narrative smoothing results from failure to take into account hermeneutic properties of the clinical account…[122]

Moreover, if the focus is on sense at the expense of reference, people might be energized by the metaphor or story but not necessarily informed. The misrepresentation of facts (intentionally or unintentionally) might occur with agreement slighted in favor of rhetoric.[123]

Narrative smoothing is similar to what Nassim Taleb, in his book *The Black Swan*, calls the narrative fallacy:

> We like stories, we like to summarize, and the like to simplify, i.e., to reduce the dimension of matters…the fallacy is associated with our vulnerability to over interpretation and our predilection for compact

stories over raw truths. It severely distorts our mental representation of the world; it is particularly acute when it comes to the rare event.[124]

And,

> The narrative fallacy addresses our limited ability to look at sequences of facts without weaving an explanation into them, or, equivalently, forcing a logical link, an *arrow of relationship*, upon them. Explanations bind facts together. They make them all the more easily remembered; they help them *make more sense*. Where this propensity can go wrong is when it increases our *impression* of understanding.[125]

Perhaps the most difficult disadvantage of using metaphors to comprehend the world is Lakeoff and Johnson's assertion that:

> In a culture where the myth of objectivism is very much alive and truth is always absolute truth, the people who get to impose their metaphors on the culture get to define what we consider to be true—absolutely and objectively true. It is for this reason that we see it as important to give an account of truth that is free of the myth of objectivism (according to which truth is always absolute truth). Since we see truth as based on understanding, we think that an account of how metaphors can be true will reveal the way in which truth depends on understanding.[126]

However, if the above statement is true, that is, if the "truth-makers" define truth by the metaphors they impose, then what role do quantifiable science and mathematics play? If metaphors are truly indispensible to understanding, if there are no objective truths,[127] then one can justifiably ask, "If a tree falls in the forest and no one is around to hear it, then who really gives a damn about botany, acoustics, and the laws of gravitation?" If metaphors are used for sense-making, to convey meaning, and to "make truth," then it is important to touch on what one means by the word "meaning."

D.   SEMANTICS

Semantics is generally defined as the study of meaning and most written or spoken communication is dependent upon the context in which it is used. Contributing factors to the context are the ontological beliefs of the participants and the wide range of meanings and interpretations assigned to utterances are a result of the cultural drivers of those beliefs.[128] Therefore, the normal ontological suspensions that occur in a statement such as "that red flag means danger" (the suspension in this case is considering a flag as

an animate entity), can be taken for granted in one context and be challenged or rejected as valid in a different context.[129] Therefore, Lyons states:

> In the last resort, it is impossible to draw a sharp distinction between the spontaneous extension or transfer of meaning by individual speakers on particular occasions in their use of the pre-existing, or institutionalized, extended and transferred meanings of a lexeme that are to be found in a dictionary. This fact has important implications for linguistic theory that go way beyond the traditional and perhaps insoluble, problem of distinguishing polysemy (multiple related meanings) from homonymy (multiple unrelated meanings).[130]

Humans see similarities based on the categories in their conceptual systems, both physical and metaphorical.[131] Since the purpose of metaphors is to understand one experience or phenomenon in terms of other experiences and phenomena, it is important to understand the synonymy of meaning in the metaphor tropes used. Distinctions in *sameness* must be made.

1.   Synonyms

There are three conditions that must be satisfied for an expression to be considered synonymous:

1.   All their meanings are identical

2.   They are synonymous in all contexts

3.   They are semantically equivalent (i.e., their meaning or meanings are identical) on all dimensions of meaning, descriptive and non-descriptive.[132]

For example, the words "big" and "large" seem synonymous at first glance, but the sentences, "I will tell my big sister" and "I will tell my large sister" demonstrate a violation of condition (1). Additionally, the sentences "you are making a big mistake" and "you are making a large mistake" violate the second condition as the second sentence, though technically meaning the same as the first, is un-idiomatic and therefore unacceptable.[133]

Lyons states, "One of the principal factors operative in semantic change is metaphorical extension, as when 'foot' what meaning "terminal part of the leg" also came to mean "lowest part of a hill or mountain."[134] And it is metaphorical extension as a

synchronic process that is at issue when one refers to the related meanings of polysemous lexemes."[135] If one has to extend various definitions and meanings to the same words, one must also look at the circumstances in which those words are used.

E.   THE POWER OF CONTEXT

"Please sit in the apple juice seat."

This is a deictic compound example offered by semanticist Pamela Downing.[136] Deictic compounds are temporary in nature and without some frame of reference for this utterance, "please sit in the apple juice seat" is meaningless.[137] However, if the statement was made to a guest at breakfast, and a glass of apple juice was at one of the table settings, this utterance would make perfect sense. In fact, it would make sense at any other meal after the breakfast even when no apple juice was available. Once referred to and accepted as the "apple-juice seat," it is understood which seat is meant, at least temporarily, and for that specific guest in that particular context.[138] Considering its limited application, though, a deictic compound such as "apple juice seat" is not likely to be lexicalized since it is not generally or habitually associated with the properties of either seats or apple juice.[139] On the other hand, "please sit on the tail gate" is more comprehensible in American society since "tailgate" has been lexicalized as a referent to a pick-up truck feature and by extension, to a pre-sporting event social activity: "tailgating." Understanding the word tailgate represents one's cultural literacy and is therefore independent of context. The culturally literate understand both concepts of apple juice and seats but an "apple juice seat" is so specific to one narrow context, the culturally literate would also know that the phrase is not inherently expected to be comprehended universally.

Another example of the power of language cultural domains/contexts is demonstrated in the poem, *O-U-G-H* by Charles Battell Loomis in which he writes of a frustrated Frenchman attempting to learn English:

I'm taught p-l-o-u-g-h
S'all be pronouncé "plow."
"Zat's easy w'en you know," I say,
"Mon Anglais, I'll get through!"

My teacher say zat in zat case,
O-u-g-h is "oo."
And zen I laugh and say to him,
"Zees Anglais make me cough."

He say "Not 'coo' but in zat word,
O-u-g-h is 'off,'"
"Oh, Sacre bleu! Such varied sounds
Of words make me hiccough!"

He say, "Again mon frien' ees wrong;
O-u-g-h is 'up'
In hiccough." Zen I cry, "No more,
You make my t'roat feel rough."

"Non, non!" he cry, "You are not right;
O-u-g-h is 'uff.'"
I say, "I try to spik your words,
I cannot spik zem though."

"In time you'll learn, but now you're wrong!
O-u-g-h is 'owe'"
"I'll try no more, I s'all go mad,
I'll drown me in ze lough!"

"But ere you drown yourself," said he,
O-u-g-h is 'ock.'"
He taught no more, I held him fast
And killed him wiz a rough.[140]

In a less humorous realm, to establish why a homeland security enterprise cultural literacy needs contextual awareness, one need look no further than challenges encountered when attempting to apply a universal definition to the word *line*. To a firefighter, it can mean either a hose or a narrow and shallow ditch; to a sailor it is a rope, to a soldier, it is where friends end and the enemy begins; to doctors and nurses it is an intravenous tube.[141] And outside of the traditional homeland security realm there other interpretations: mathematicians, gamblers, financiers, pilots, cartographers, actors, dancers, musicians, football players, carpenters, plumbers, electricians and so forth. In

this case, there can be no objective reality because different cultures have different conceptual systems and the human aspects of reality, which can vary according to culture, are the most important to an individual.[142] Lakoff and Johnson assert:

> Each culture must provide a more or less successful way of dealing with its environment, both adapting to it and changing it. Moreover, each culture must define a social reality in which people have roles that make sense to them and in terms of which they can function socially. Not surprisingly, the social reality defined by a culture affects its conception of physical reality. What is real for an individual as a member of a culture is a product both of his social reality and of the way in that shapes his experience of the physical world. Since much of our conception of the physical world is partly metaphorical, metaphor plays a very significant role in determining what is real for us.[143]

As an illustration on how the proper contextual *line* definition is critical, consider an incident that involves fires, riots, and power outages. If the incident commander gives the order to "charge the line," responders will execute according to their own disciplines and professional cultures: the cops will wade into the rioters, utility workers will energize the system, and firefighters will open up with their attack hoses, and while none of them would technically be wrong in their respective contexts, the objective consequences could be tragic.[144]

1. Gricean Maxims

Philosopher Paul Grice was interested in how logic was used in everyday language, and he produced a set of maxims that establish a proper form of conversation reflecting the purposeful and rational nature of social interaction. In these "principles of cooperation," he identified four main categories that conversational participants usually follow but can also violate.[145] In brief, the features of these maxims are:

- Quantity: Provide as much information, but no more than, as is required for the present needs and in the correct context.

- Quality: Tell the truth and have sufficient evidence for what is said. (However, telling the truth is not the same as stating what is true)

- Relation: Be relevant. Properly connect the conversation to the circumstances under which it is taking place.

- Manner: This is further divided in sub-maxims: avoid obscurity of expression, avoid ambiguity, be brief, be orderly.[146]

These maxims are at the heart of the literalist school of language and the proper usage of metaphors. If the purpose of conversations is to convey meaning in an efficient manner, then is it the participants' adherence to the Gricean maxims that make it possible. While meaning may be conveyed, though, sense-making of the meaning must taking place for understanding to occur. For example, the two sentences, "he is poor *and* he is honest" and "he is poor *but* he is honest" have the same propositional content according to the maxims. But native English speakers could argue that they do not necessarily have the same meaning because it appears the speaker is indirectly mentioning that it is unusual to be both poor and honest in the second sentence. Without knowing the context of the utterance, one cannot make sense with certainty of what is meant.[147]

Looking at another instance of metaphorical versus literal expressions, the statement "John is a tiger" can be both metaphorical and literal and still satisfy Gricean requirements. For example, the proper name "John" can be assigned to an individual animal of the living species humans have labeled "tiger." Or, a person named John could be performing the role of a tiger on in a stage play. These literal expressions are not "more true" than making sense of "John is a tiger" in understanding the statement as John is ferocious or aggressive.[148] Therefore, applying Gricean maxims and the cooperative principle to metaphor interpretations is not so much about coaching the addressees in the conversation as to what the metaphor actually means but is more akin to the initiation of a meaning-producing deductive process when the addressee hears/reads, "John is a tiger:"

> The speaker/writer cannot mean that literally. However, I have no grounds for believing that he/she is being uncooperative. His/her utterance has the form of a statement. Therefore, he/she must be trying to tell me something, which presumably makes sense to us both (and the light of our beliefs and assumptions about the world, et cetera,). He/she must also believe (if he/she is being cooperative) that I can work out the non-literal meaning for myself—presumably on the basis of the literal meaning (of the whole utterance—inscription or of one or more of its component expressions). One contextually acceptable way of using language to

convey something other than what is actually said is by means of metaphor. Let me see whether I can interpret the utterance metaphorically.[149]

The goal then is to support as clearly and reliably as possible, the distinction between what is actually said and what is being conveyed by saying it. At the same time, cooperative and rational participants in the exchange must span the gap between what is said/what is conveyed by applying one or more of the maxims to the contexts of utterances so they may deduce the intended meaning.[150] They need to make sense of it. However, this means that various arguments may have differing degrees of parsimoniousness, that is, the credibility of the argument hinges on how many assumptions, preferably as few as possible, the listener is required to make.[151]

It is the relevance of the statement "John is a tiger" that shapes metaphorical interpretation, and it will yield varying results depending on the context of utterance.[152] Essentially, this means that context plays a dual role; first, the context of the situation may have to be known in order for an accurate interpretation of a metaphorical expression to be possible. Second, if information is being conveyed beyond what is being said, then the addressees must conclude that they must share with their fellow conversational participants some contextual relationship.[153]

Thus, for sense-making to take place, the context in which communication is occurring *must* be considered.[154] For instance, in the context of a cocktail party a guest might refer to another guest with a glass in his hand as, "that man over there drinking a gin and tonic." But even if the man in question is drinking some other liquor or simply water with a lemon or even if he is only holding the glass for someone else, the reference to the man is successful because the words "drinking" and "gin and tonic" though they may be technically false, make sense in the circumstances.[155] In addition, politeness is also a factor in the value of context. For example, person A may refer to person B's offspring as "your son," even though person A knows that B's "son" is actually the result of an extramarital affair conducted by B's wife. Again, the context allows for the communication to make sense, even though politeness has intervened to contradict the facts of the situation.[156] In both of these situations, the principles of cooperation are still

satisfied even though the Gricean Maxim of quality—saying only what one believes to be true—does not function in their respective contexts.[157] According to Lakoff and Johnson:

> When people who are talking don't share the same culture, knowledge, values, and assumptions, mutual understanding can be especially difficult. Such understanding is possible through the negotiation of meaning. To negotiate meaning with someone, you have to become aware of and respect both the differences in your backgrounds and when these differences are important. You need enough diversity of cultural and personal experience to be aware that divergent world views exist and what they might be like. You also need patience, a certain flexibility in world view, and a generous tolerance for mistakes, as well as a talent for finding the right metaphor to communicate the relevant parts of unshared experiences or to highlight the shared experiences while deemphasizing the others. Metaphorical imagination is a crucial skill in creating rapport and in communicating the nature of unshared experience. This skill consists, in large measure, of the ability to bend your worldview and adjust the way you categorize your experience. Problems of mutual understanding are not exotic; they arise in all extended conversations where understanding is important.[158]

Kuhn points out that once communication problems become evident, though, they cannot be fixed by just trying to define the terms in contention—such problems are not simply linguistic in nature. The participants in a communications breakdown use their words not just with different meanings, but with different comprehensions of those words based on their respective experiences.[159]

Einstein's theories of relativity state that the observance of phenomena, how it is perceived, depends upon the position from where it is observed. However, the laws of nature still operate universally independent of specific frames of reference and no particular frame is more correct than another. Theories of relativity must not be confused with relativism in philosophy, which holds that there are no absolute truths.[160] (Oddly, one cannot state "there are no absolute truths" without contradicting oneself as the statement represents an absolute truth.) Still, there is perhaps room for both understanding the physical world in an objective manner while also remaining cognizant that the physical world is seen from different angles.

In his presentation, *The Divided Brain and the Making of the Western World,* Iain McGilchrist holds that the divisions of "right brain/left brain" are not total[161] and that

imagination and reason requires both hemispheres to function together.[162] The right brain hemisphere is newer in human evolution, and it operates in an embodied world in relation to a concrete world. This more creative, holistic brain activity is "on the lookout" for differences and it appreciates the contexts of time, place, relationships, history, and style. Also, right-brain activity has more of a focus on human characteristics and emotions: it understands the individual and not just the categorical. It has a disposition for the living over the mechanical by interpreting facial expressions, body language, and metaphors and their implicit meanings.[163] This half of the brain acknowledges that some things can never be fully understood and that exactitude will be lost in seeking richness.[164]

On the other side, the left half of the brain depends on denotative language and abstraction yielding clarity. This enables it to manipulate that which is known, fixed, static, decontextualized, explicit, isolated, and general in nature.[165] This hemisphere looks to find perfection and "The Answer" and it very well may do so but it will ultimately be lifeless and empty.[166] McGilchrist points out that there is no way to rationally prove that rationality is a good way to look at the world.[167] But then the concept of what is "good" comes in to question, bringing up philosophical and contextual arguments of all sorts.

F.   SUMMARY

Since it is not a tangible object in the physical world, when dealing with a concept such as homeland security, the matter of perspective is essential and using metaphorical and representative language, while not as precise and sophisticated as mathematics and science, can still provide common ground for all homeland security practitioners to stand upon. It may be that some literal final answer can never be determined but then the key is in the various participants' awareness that other frames of reference exist, that other metaphors can be and are being applied, and homeland security participants' willingness to adjust their behavior accordingly in different situations.

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IV. METAPHOR APPLICATIONS

> Words differently arranged have a different meaning, and meanings differently arranged have different effects[168]
>
> Blaise Pascal

All theories of management and organization center on types of metaphors, which allow for powerful ways to see and understand.[169] But by virtue of their use of metaphor, no one theory can be the end-all, be-all of management.[170] Metaphorical expressions are already in use to communicate homeland security concepts: lone wolf; connect the dots; security theater; boots on the ground; dodged the bullet; in the crosshairs; turn the funnel around; stovepipes, etc. The applications of various kinds of metaphors to organization and endeavors have both positive and negative aspects. As noted above, when using metaphor to explain phenomena, one has a tendency to highlight and thus find what one is looking for while disregarding facets of the metaphor that do not fit. Despite the literalist view that metaphors serve only as mere embellishment to communication, analogies and models are often used in the "hard sciences" to describe events and observances. It is here that extended metaphors have value. The conveyance of meaning and sense making are better served the more detailed the metaphors chosen to communicate information.

A. METAPHORS IN SCIENCE AND MATHEMATICS

The literalist school's position that metaphors are unnecessary forms of linguistics seems supported by the quest for mathematical precision working against some analogies because, when reduced to precise mathematical expression, some metaphors are more complex than that which they are employed to explain.[171] For example, as stated by Carl B. Boyer and Uta C. Merzbach in *A History of Mathematics*, "Everyone thinks that he or she knows what the number three is—until he or she tries to define or explain it."[172] So, for a model or analogy to be scientifically satisfactory, there must be a structural identity between the phenomena and the model trying to explain the phenomena.[173] Additionally, it is important that the model is chosen does not affect what is being modeled. The observer who creates the model (or analogy or metaphor) gathers data about the

phenomena and develops a generalized description. This model can then be used to instruct on what the phenomena is and why and how it works.[174]

For instance, an analogy of billiard ball-like particles can be applied to entities that behave like billiard balls such as gas molecules and calculations can then be made to ascertain the energy produced by colliding billiard balls. This metaphorical model can then be tested, elaborated upon, and adjusted (e.g., questions can be asked regarding the billiard balls concerning their diameter and rigidity/elasticity) in a fashion that is not possible in a strictly deductive system. This is due to the model involving things and actions (billiard balls moving around on a table), which are already known versus the new phenomena it is attempting to describe (gas molecules in a vessel).[175]

Many times, the models and analogies for comprehending scientific observations are often derived from the understanding of other scientific discoveries. Boyer and Merzbach claim:

> Abstraction and the discernment of patterns have been playing more important roles in the study of nature, just as they have in mathematics. Hence, even in our day of hyper abstract thinking, mathematics continues to be the language of science, just as it was in antiquity. That there is an intimate connection between experimental phenomena and mathematical structures seems to be fully confirmed in the most unexpected manner by the recent discoveries of contemporary physics, although the underlying reasons for the agreement remain obscure.[176]

Essentially, this means that there are mathematical models as well as traditional forms. In *Forces and Fields: The Concept of Action at a Distance in the History of Physics*, Mary B. Hesse claims that even though there may be no tangible object that can be pictured (compared to visualizing billiard balls), the word "model" is in widespread use in fields as diverse as cosmology, nuclear physics, brain physiology, and psychology.[177] In fundamental physics, models are mathematical at least in part, such as in cosmology where 'world models' are certainly not metaphoric pictures.[155] Hesse states that the descriptions or metaphors of a particular field of science that are the most fundamental (more general) are often influenced by their period of history:

> Democritan atoms, Newtonian attractive and repulsive particles, classical electrodynamics, and quantum electrodynamics, are fundamental relative

to their historical context. These models do not fall naturally into the hypothetical—deductive hierarchy in terms of which theories are generally described, because in these terms they seem to be functioning at once as low-level generalizations, as high-level hypotheses, and as rules of inference.[179]

However, even though mathematics is the language of science, it is spoken in different "dialects," and there are still contextual considerations when using mathematical formulae as a means of communication. For instance, the ability to use different bases of math, such as base 6 or base 8, mean that a translation from those bases to base 10, the most commonly used base by human beings, is necessary to eliminate the problems posed by context. If just the common mathematical symbols were used with one speaker using base 6 and the listener thinking in base 8, misunderstanding and erroneous conclusions will result.

Another context for mathematics is the possible variants to the mathematical order of operations. Since the sixteenth and seventeenth centuries, mathematicians have traditionally used the parentheses, exponents, multiplication, division, addition, subtraction (commonly known as PEMDAS) order of operations in solving equations.[180] That is, first those terms in parentheses are solved, then exponents, then multiplication/division and lastly addition and subtraction. Yet, the order of operations is only a convention of modern algebra.

1. An Inquiry

The following inquiry was made to the Math Forum at Drexel University:

I am working on a thesis that includes the contextual nature of communications, including mathematical communications. My conjecture is that even though mathematics is the language of science, there are still relative aspects to it, such as the order of operations convention. Is the order naturally derived—is it the only way to "unpack" the physical world? If a different order were used, say MADSEP, would the results be correct in the context of that mathematical "grammar"? If my hunch is correct then there would be several different solutions to the same problem depending upon which rules were used. I have looked at some of your other postings on the subject but they don't quite answer my question. The research I've done myself is inconclusive. Thank you.

Yielded the reply:

> The PEMDAS convention just exists so that we can write polynomials
> with a minimum of grouping symbols, e.g., we want to be able to write
>
> $$3/4x^3 + 4/5x^2 - 5/6x + 6/7$$
>
> instead of
>
> $$((((3/4)(x^3)) + ((4/5)(x^2))) - ((5/6)x)) + (6/7)$$
>
> This is convenient, because we use polynomials to represent almost
> everything. If we had another convention, we'd just have to use grouping
> symbols differently. Polynomials would be harder to write, and some
> other kinds of expressions might be easier to write. *But none of this has
> anything to do with constraints from the physical world.* [emphasis
> added][181]

This means that the number of possible orders of operations is factorial equation
of six, represented by the formula:

$$6!$$

And written as:

$$6 \times 5 \times 4 \times 3 \times 2 \times 1$$

Yielding 720 permutations of the same mathematical problems (and answers)
depending upon the order of operations rules chosen for how one solves the equation. A
rabbit hole of semantic inquiry can open up in this instance: conveying the meanings of
mathematical expressions are based simply on arbitrary choices made for symbol use and
how those symbols are manipulated. Furthermore, any language, including mathematical
expressions, must have rules as to how that language is used. A claim to communicative
objectivity is still dependent upon the form in which the communication takes place. For
instance, it has been posited that if an intelligent extraterrestrial species were to contact
the Earth, mathematics would offer the best chances for communication: that once the
translation of the symbols was developed, formulae could be employed to express ideas
since the concepts of addition, equality, and negation are thought to be universal.[182] But
since there is no objective or universal method for unpacking the physical universe with
no subsequent dictate that drives the PEMDAS rule, a multitude of orders of operation

would need to be sorted before a mathematical translation was possible. It can be argued therefore that even mathematics, as objective as it is as the language of science, is not a completely context-free form of communication.

There are also instances in which *absence* of mathematical precision can actually work in favor of the pursuit of knowledge. Charles Darwin, genius though he was, was not a sharp mathematician[183] but had he been so, he would have realized that the understanding of genetics prevailing at the time of his writings on natural selection would not have been able to support his findings. If taken to its logical conclusion, the model Darwin was using, called *blending*, would have shown that certain genetic features would not be passed from generation to generation but simply absorbed into the overall attributes of the population. For example, in the blending metaphor, the introduction of a single white cat into a population of 10 black cats would not result in the variety of colors that are actually produced—all black, all white, and varying shades of grey. Instead, blending would lead to successively lighter cats, none of them completely white and certainly no black ones.[184] Darwin's theory of evolution required the yet-undiscovered Mendelian genetic dominant/recessive model to make it work, a fact of which Darwin was unaware. Other speculations arise when one considers if Darwin had been more numbers savvy: What if he had tried to force his theory into the mathematical underpinnings of nineteenth century genetics? How would the theory been warped if he had not botched his calculations? Thus, both history and science were shaped by Darwin's brilliance in one area and by his incomplete knowledge in another.[185]

B.   METAPHORS AS APPLIED TO ORGANIZATIONS

When looking at the application of metaphors to organizations, one must first understand what is meant by the term. For the purposes of this thesis, Peter K. Manning's explanation will be used:

> *Organization* is a label with a set of domain assumptions about the semantic space in which it operates, and a set of implicit meanings that are tacitly assigned to behaviors, then it cannot be a concrete, unequivocal, phenomenologically (sic) invariant thing. The environment cannot be usefully seen as a single object, nor can the organization.[186]

A main focus of this thesis is devoted to the machine metaphor since many of the organizations and systems currently operating in the homeland security environment are machine-like structures. In *Images of Organization,* Gareth Morgan offers numerous extended metaphors for understanding organizations and their structures. A précis of three of these metaphors are presented here; machine, living organism, and brain, and they are applied to organizations along with their entailments—their strengths and limitations.

1. The Machine Metaphor

The inventor of sort of proto-computer, Charles Babbage, promoted a scientific attitude in management and organization by focusing the importance of dividing work functions and planning.[187] Although he espoused his ideas in 1832, it was not until the early twentieth century that they were adopted on a wide scale.[188] In factory production, new processes and systems were advanced to improve efficiency and to reduce the variable of worker decisions by subordinating them to standardized procedures.[189] The neat and systematic nature of the organization was the result of clearly defining the components and setting them to work in an orderly fashion. The organization and workers' behavior began to take on attributes of the machines they were operating. Morgan states, "We talk about organizations as if they were machines, and as a consequence we tend to expect them to operate as machines: in a routinized, efficient, reliable, and predictable way."[190] This last statement demonstrates the power of metaphor in general; the way one conceives of the organization is shaped by the metaphor that is applied to it.[191]

Organizations in this mechanistic view are bureaucracies[167] and Max Weber, a German sociologist, detected similarities between the routines of material production and the administrative tasks of a bureaucracy. Weber was concerned with organizations that were efficient by being precise, regular, reliable, prompt, and speedy and how such efficiency would impact human society.[193] The consequences of organizations fixing the division of labor, developing and adopting comprehensive rules and regulations and by

direction through hierarchical structures might include the human spirit and democracy becoming subjugated to the needs of the machine.[192]

Contrary to Weber was the development of two schools of thought: "scientific management" and "classical management theory."[193] Scientific management looked toward the individual job function and how it should be designed and administered while classical management theory sought for blueprints of the total organization. The long-held conceptualization of the organization as a machine is derived from the above approaches.[194]

However, since people are not inanimate machine parts, the application of classical management theory and the desire for the highest possible degree of rationality and efficiency is not a simple process.[195] The following are the basic tenets of classical management theory:

a.   The Principles of Classical Management Theory

- unity of command—an employee should receive orders from only one superior.

- scalar chain—the line of authority from superior to subordinate, which runs from the top to bottom of the organization; this chain, which results from the unity of command principle, should be used as a channel for communication and decision-making.

- span of control—the number of people reporting to one superior must not be so large that it creates problems of communication and coordination.

- Staff and line—staff personnel can provide valuable advisory services, but must be careful not to violate line authority.

- Initiative—to be encouraged at all levels of the organization.

- Division of work—management should aim to achieve a degree of specialization designed to achieve the goal of the organization in an efficient manner.

- Authority and responsibility—attention should be paid to the right to give orders and to exact obedience; and appropriate balance between the authority and responsibility should be achieved. It is meaningless to make someone responsible for work if they are not given appropriate authority to execute that responsibility.

- Centralization (of authority) — always present in some degree, this must very to optimize the use of faculties of personnel.

- Discipline—obedience, application, energy, behavior, and outward marks of respect in accordance with agreed rules and customs.

- Subordination of individual interest to general interest—through firmness, example, fair agreements, and constant supervision. Equity—based on kindness and justice, to encourage personnel and their duties; and fair remuneration, which encourages morale yet does not lead to overpayment.

- Stability of tenure of personnel—to facilitate the development of abilities.

- Esprit de corps—to facilitate harmony on the basis of strength.[196]

The other school of management thought, scientific management, was developed by an American engineer, Frederick Taylor, who desired meticulous and scientific time and motion studies to examine and standardize job functions, including simple and minor tasks, to control and improve operations.[197] Taylor produced five principles of scientific management, briefly:

- Shift all responsibility for the organization of work from the worker to the manager—managers should do all of the thinking related to the planning and design of work, leaving the workers with the task of implementation.

- Use scientific methods to determine the most efficient way of doing work—design the workers tasks accordingly, specifying the precise way in which the work is to be done.

- Select the best person to perform the job thus designed.

- Train the worker to do the work efficiently.

- Monitor worker performance to ensure that appropriate work procedures are followed and that appropriate results are achieved.[198]

In this model, workers became interchangeable parts–easy to train and supervise, cheap, and readily replaceable.[199] The popularity of the mechanistic approach is due to its emphasis on speed and efficiency and the degree of control offered to the managerial components. As long as the environment is relatively static, it works;[200] however, this mechanistic approach only performs well in the same circumstances in which machines work well:

- when there are straightforward tasks to perform

- when the environment is stable enough to ensure that the products are appropriate

- when one desires to produce exactly the same product repeatedly

- when precision is at a premium

- when human "machine" parts are compliant and behave as they have been designed to do[201]

However, by embracing the machine metaphor as applied to organizations, one misses the distorting effects of the metaphor. Metaphorical comprehension of an organization as a machine with a rational purpose and technical processes discourages the consideration of human factors and that the organization/machine is operating in circumstances that are more complex than can be handled by most machines.[202]

b. Limitations of the Machine Metaphor

Organizations that function along the lines of machines face constraints in how effectively they can operate because they:

- Cannot, will not, or have difficulty adapting new conditions—the absence previously developed process for handling problems may result in changes and difficulties being ignored. Or, instead of a comprehensive response, an attempt may be made to force the problem(s) into practices and policies already in use.

- Barriers result from divisions in functions, roles, hierarchy—members may have an inflated sense of significance of their area of operations and/or have a limited perspective on what is occurring outside of their respective functional departments. Actions in one section may work against the interests of other sections or against the whole of the organization.

- Rigid application of rules and regulations—attitudes toward work may be mindless, apathetic, or unquestioning. People come to know what is *not* expected from them as well as what is expected.

- Goals of individuals may work against goals of the organization— competition among departments and people for organizational resources may result in selfish behavior vis-à-vis organizational interests. If individuals and their departments vie for power, promotion, and money at the expense of others, the aims of the organization may be altered or thwarted.

- Dehumanizing effects on workers—the potential of each worker is sacrificed in order to make the worker fit into functional molds. The limitations imposed on the individual do not allow for the display of abilities and characteristics that might be of benefit to the organization.[203]

The focus on goals, structure, and efficiency and the relationships among them as primary features of machine metaphor has led to a kind of permanence in organization theory. The result is that classical management theory has become a kind of ideology; that if an organization resembles and is designed like a machine then it should be run as one.[204] There are, however, other metaphors that can be applied to organizations

2.   The Living Organism Metaphor

Similar to organisms in nature, successful organizations appear to evolve over time. They develop capabilities and arrangements to handle a changing environment. If they do not, they become extinct as are many old-style bureaucratically run companies. While there are various opinions on how an organization can achieve the optimal connection with its environment, the basic trend toward a biological approach has been recognized.[205] Some of the key aspects of this metaphor is understanding that organisms, regardless of their sophistication and complexity, are unendingly interacting with their environment; the organism and environment are dependent upon one another (to varying degrees) and it is open nature of this relationship that contrasts with the closed systems of machines.[206]

Also, the relationships in organizations among the structure and specializations parallel those of life forms. Even the most basic cell is involved in complex processes among its form, metabolism, nutrition, etc.[207] Another important feature of this metaphor is that there are many ways to get to a present condition. Wings, be they possessed by birds, bats, or butterflies, allow each of these species to fly even though all came into being along vastly different evolutionary tracks.[208] This means that a number of methods can be adopted to account for variations in resource availability and starting points to achieve specific ends.[209] This last component of the metaphor is crucial since, as Charles Darwin understood, selection as the instrument for evolution can only work if there are different characteristics from which to choose.[210]

Evolutionary biology holds that organisms must compete with other species for scarce resources to sustain their existence. As applied to organizations, it is the type,

number and distribution of organizations within the environment that determine the nature and degree of competition. But there are often "inertial pressures" that work against the adaptability of organizations in response to the environment. Overspecialization, established and entrenched mindsets of managers, inadequate data, traditions, and legal and fiscal circumstances can conspire to thwart change.[211]

However, while struggle seems to be at the heart of selection, organisms often cooperate with other species as well. Sometimes, resources are abundant and sustainable and organizations that are operating in such an environment may be able to focus on value creation and collaboration.[212] Organizations can impact their environment and can shape how it develops, particularly when there is a common effort with other organizations.[213] In this context, the whole ecology of the system evolves and not simply the separate elements in the system. For instance, various industries often form formal and informal relationships to lobby, fix prices, regulate trade and competition, etc., thereby influencing the environment in which all exist and function.[214]

Essentially, the organism metaphor has six approaches:
- organizations as "open systems"
- the process of adapting organizations to environments
- organizational life cycles
- factors influencing organizational health and development
- different species of organization
- the relations between species and their ecology[215]

a.   Strengths of the Organism Metaphor

Compared to the mechanistic perspective of organizations, the organic view offers distinct advantages. The philosophy of openness and total ecology provide for more innovative adaptations to changes in the environment. The closed system has little consideration of the overall environment, and the designed structures do not evolve or are not "re-machined" with a comprehensive set of targets in mind. Objectives in the machine organization are limited to desired specific outcomes while more dynamic goals are the hallmark of organism-like organizations. This is evidenced by:

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- The organization's interactions with its environment and other organizations are continual and open. This prompts a view of a perpetual evolution and more adaptable and elastic entity, which is more than the sum of its parts.

- Survival of the organization is a process; needs are met by adjusting goals and operations to acquire that which satisfies those needs. The focus is on achieving equilibrium among internal processes or sub-systems such as human factors, strategies, the incorporation of technologies, etc., is critical to how the organization relates to the external world.

- The varieties of organizations allow for a large array of choices in how those entities organize either to cooperate or to compete. Planners and managers have a rich selection of options when making decisions.[216]

b.   *Challenges to the Organism Metaphor*

As socially constructed entities, organizations lack the tangibility of the biological and physical world. The actions of human beings mold the organization and environment to degrees that are not possible in nature and, thus, they can shape their own destinies. Adaptation to the environment and the ability of the environment to choose which organizations survive implies a more random process than actually exists. Also, while it is tempting to view the organization as a unified whole, the majority of organizations do not possess the quality exhibited by complex life forms. For instance, the synchronicity of the internal components of an organism is critical to that organism's survival (e.g., the human liver functioning properly in the digestive process), but organizations are comprised of ingredients that can exist independent of the organization itself. The political and selfish motives of individuals and/or divisions are seen as abnormalities, but even if the organization is lacking unified and cooperative parts, it will still function and perhaps survive. Biological forms do not have this luxury.[217]

If attitudes of cooperation and selflessness for the greater good of the organization become normative in nature, they run the risk of evolving into ideologies (much the way the mechanistic approach is embodied in classical management theory and scientific management). This method then looks to align the person with the organization to the mutual benefit of both but at the risk of subordinating human intrinsic qualities for the advancement of the organization. Additionally, such an ideology rekindles the notion that, since only the fittest survive, then only the fittest *should* survive. This is the primary

tenet of social Darwinism: the application of the principles natural law and biological evolution to capitalism in the free market. Again, this approach diminishes the actions of individuals in the organization.[218]

3. The Brain Metaphor

Morgan reiterates an idea by Daniel Dennet, a cognitive philosopher who outlines a view of the brain as a chaotic process where parallel "multiple drafts" are created all throughout the brain.[219] These drafts arrange themselves so that they work together (or against one another) as an emergent pattern of coherence: there is no centralized director of the brain.[220] In this metaphor, the top-down approaches of typical management would not apply, and thus it provides a challenge for managers perform in such a way as to avoid total randomness. "Reference points" (such as in cybernetics) would need to be developed and defined to channel activities to allow for a multitude of events to take place and drive innovation.[221]

The emphasis of the brain metaphor is that organizations can function as information processing systems:

- a control system similar to a complex computer or telephone switchboard, transmitting information through electronic impulses
- the kind of television system with the capacity to reassemble coherent patterns and images from millions of separate pieces of data
- a sophisticated library or memory bank for data storage and retrieval
- a complex system of chemical reactions that transmit messages and initiate actions
- a mysterious "black box" linking stimuli and behavior
- a linguistic system operating through a neural code that translates information into thoughts, ideas, and actions, rather like the code represented in an alphabet can be converted into prose through words and sentences[222]

a. *Strengths of the Brain Metaphor*

The brain metaphor, unlike the machine and organism metaphors, has not been applied as thoroughly to the understanding of organizations. It suggests that a completely new and unique management theory may be possible. In addition, this

metaphor powers the "learning organization," since it provides a loose blueprint for how the innovative and adaptive aspirations of the organism metaphor may be accomplished. The brain analogy questions the tenets of planning and goal setting with strong direction from the top through layers of hierarchical structures.[223] According to Morgan:

> Leadership needs to be done if used rather than centralized; even though goals, objectives, and targets may be helpful managerial tools, they must be used in a way that avoids the pathologies of single loop learning; goal seeking must be accomplished by an awareness of the "limits" needed to avoid noxious outcomes; and hierarchy, design, and strategic development must be approached and understood a self organizing, emergent phenomena.[224]

b. *Challenges to the Brain Metaphor*

Given the brain metaphor's radical departure from traditional management theories, the requisite shifts in power and control structures and shifts in mindsets will face resistance from quarters that feel threatened by such shifts.[225] Additionally, there is a certain brain bias in this metaphor since it is human brains that are comprehending organizations as brains. Furthermore, there is no broad consensus on a lucid and workable image of the brain, leaving one with the problem of having to employ other metaphors to describe the brain metaphor.[226] Also, frictions can develop within the organization with the self-organization/learning elements in one camp versus the systems of control in another. If these control and power structures are diminished in favor of the more elastic and emergent factors, the ability to direct the organization in a meaningful way could be hampered because authority could be diffused throughout the organization as sovereignty is relinquished by the control systems to the emergent self–organizing components.[227]

Such a scenario might get push-back from the managerial status quo.[228] Even though learning as end in itself is rarely opposed, when it comes to actually loosening the control that comes with clarity of structures and hierarchy, managers may view the evolution as chaotic. Whatever control, power, and hierarchy that exist must also become self-emergent to allow all ingredients to make contributions. The uncertainty of this process could also result in reluctance to embrace the metaphor since no one knows what

might be the results of organizing as a brain.[229] Learning necessitates the ability to self-reflect and self-criticize; behaviors that are not generally practiced in traditional management approaches.[230]

C.   SUMMARY

Each of the three organization metaphors presented here have implications for how homeland security may be conceptualized. Moreover, it is not just the metaphors that are used; it is *how* they are used that is relevant. For example, machines are not able to recognize themselves as such. Many living organism are not sentient. Brains can comprehend themselves but perhaps without total understanding. Therefore, metaphors that are chosen to understand homeland security must take into account the ability of the enterprise to recognize that a metaphor is being applied to it—that if a metaphor is appropriate and acceptable, then homeland security components might purposefully shape themselves into enterprises/organizations/ structures/endeavors that more closely resembles the metaphor.

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V.   ANALYSIS AND FINDINGS

Men should strive to think much and know little[231]

<div align="right">Democritus</div>

Given the disparate missions and perspectives of stakeholders, this author conducted an analysis of metaphoric language used in homeland security documents to determine what contributions metaphors make to the enterprise. The hypothesis of this thesis is that workable conceptualization and definition is lacking because the homeland security enterprise is not communicating in a language typically used by entities more open to innovation. Homeland security professionals face contextual challenges in understanding the nature of homeland security, and to overcome these obstacles, metaphors can be employed, much as they are by innovative business and entrepreneurial thinkers, to bridge organizational language and cultural differences.

Persons not having a common culture (e.g., knowledge, ideals, and suppositions) can have difficulties reaching mutual understanding. A novel event, for which no pre-determined classification is available (such as the creation of the homeland security enterprise) produces a need to seek resemblances to more familiar features or concepts. Such resemblances can be expressed through representative language and the novel event named and communicated with metaphors.[232]

Thus, far, this thesis has advanced the notion that metaphors, especially extended metaphors, can provide a means for conceptualizing, defining, and representing the homeland security enterprise. *If homeland security cannot be precisely identified in purely objective terms, then the metaphors that are employed in homeland security writings and the contexts, in which they are used, will have implications for understanding and defining homeland security.* For metaphors to work in this way, one must consider the several factors noted in Chapter III:

- Metaphors are necessarily partial—no one metaphor can completely describe phenomena in every detail

- *Systematicity*, how various aspects of the metaphor are either emphasized or downplayed; *grounding*, the link between an individual's experience

and the conceptualization of that experience; and *coherence/consistency*, the ability of different metaphors to "fit" together, all must be properly examined to create precise descriptions

- Metaphors can actually shape how phenomena are perceived and care must be taken to avoid the tendency toward self-fulfilling prophecy

- The context of the metaphor use or application must be considered in order to avoid misunderstandings

- All aspects of a given metaphor, both positive and negative, must be identified to determine if the metaphor is actually useful

This study used a qualitative document analysis in two stages to uncover metaphor usage by frequency and by type. The author analyzed documents in two categories associated with homeland security: seminal documents generated since September 11, 2001, and subsequent writings that attempt to describe, define, and/or explain the homeland security enterprise.

A.   PROCEDURES

Research conducted was a two stage qualitative document analysis involving five seminal homeland security documents and four subsequent homeland security writings. Originally, extended and complex metaphors were sought in the first stage: the coding of the seminal documents. The findings were that descriptions and explanations of a metaphorical nature in these materials were scarce. None of the seminal documents used extended metaphors; metaphors that are explored and expounded upon at length. Rather, any metaphorical language in the formative documents were simply referenced but with no extrapolation of the metaphorical concept underlying the word or phrase. Therefore, in the second stage of the research, the coding of the subsequent writings required a change in search criteria in order to produce usable information. Since the findings in the first stage were extended metaphor data-poor, the research analysis involves only data uncovered in the subsequent writings.

1.   Coding Considerations

- Analogies and images comprised the vast majority of the metaphorical expressions found. While some similarities existed between the two types, analogies were coded as those terms, which are less tangible than images.

This means that some bias in the coding process is unavoidable. For instance, "stake-holder" is derived from stakes driven in the ground to mark out a claim on land. But, "stakeholders" in the context of the analyzed documents are not literally persons physically holding a stake while it is being hammered into the ground. Instead, they are persons who claim rights to a certain "property" such as inclusiveness in a concept, program, or operation. Therefore, the coding of "stakeholder" as either an analogy or an example of imagery is prone to a degree of subjectivity depending on the researcher. This is simply because researchers' personal experiences factor into how different categories are considered. What one assesses to be an example of imagery, such as the word "precipitate,"—a solid object—might result from experiences with laboratory chemistry whereas another investigator may consider "precipitate"—a verb—as an analogy in the context of meteorology.

- Codes for similes were triggered by the use of the words "like," "as," and "as if" when used as a comparison.

- The metaphors category in the second stage of the research was reduced from the extended metaphors originally sought in the seminal documents to be simply those instances where words or phrases had definite relationships to one another in the same sentence, paragraph, and/or theme. The text that was coded was limited to those words that were actually referential in a metaphoric sense. For example, "combating terrorism" is a more literal phrase than "combating complacency" since most definitions of terrorism include some mention of violence, inherent in the concept of combat, whereas the notion of complacency is not commonly associated with violence. Therefore, the latter use of the word "combat" would be coded as metaphoric whereas the former would not. Likewise, the phrase, "pay more for government services," referring to the concept of money, is a more literal expression than "pay more *attention* to government services," since it is referring to concentrated awareness, which is less tangible than money and therefore more metaphoric in nature. Additionally, the word "evolve" is typically perceived as a nature driven and organic process compared to the words "develop" or "establish," which have a quality of being more human-driven even though "develop," "development," and "establishment" certainly take place in nature and in evolution.

- The occurrences of analogies and images is greater in part to metaphors and similes because the latter might have several words and phrases included in them yet they would count only as a single metaphor or simile. Individual words were commonly coded as analogies or images.

Specific examples of metaphors coded include the phrase, "…fertile conditions for terrorism to grow."[233] This was classed as a metaphor due to the connection between the words "fertile" and "grow." On the other hand, the phrases, "cobbled together" and

"glued together," while in close proximity in the text and referring to the same phenomenon,[234] were classified individually as images instead of collectively as a metaphor because "cobbling" invokes a specific image of nailing a shoe together, whereas "gluing" can take place in any number of instances.

Additionally, some words could have been coded in different categories with equal accuracy. For example, "level" was typically coded as an image throughout all documents but when it is found in conjunction with other words such as "view" and "perspective,"[235] it has a more proper relationship to the metaphor code than to stand alone as an image code. In situations such as these, coded metaphors were considered to have a higher claim to words or phrases than other categories, especially in instances in which the absence of the word or phrase would have meant that the metaphor would not exist.

Also, different metaphors commanded different allegiances of the same word in various contexts. For example, on page three of *Defining Homeland Security,* the compound word "oversight" is coded as a part of a metaphor with respect to the words "focus," "clarity," and "unclear"—the emphasis being on the last syllable—*sight.* On the same page, in a different usage, "oversight" was coded as a part of a different metaphor since the words; "heightened" and "higher" are related to the first syllable—*over.*[236]

Finally, misspelled words were coded in their proper context. For instance, in *Does Homeland Security Exist Outside the United States?*, a statement on page two describing the United Kingdom's institutions includes, "…the Home Office, which is the national-level department that *overseas* aspects of the law enforcement mission."[237] Clearly, the word is meant to be *oversees* and was coded as such.

B.   FINDINGS

1.   Formative Documents

All of the seminal documents analyzed: *The National Strategy for Homeland Security (2002)*, *The National Strategy for Homeland Security (2007)*, *The Quadrennial Homeland Security Review*, *Crisis Response and Disaster Resilience: 2030*, and Secretary of Homeland Security Janet Napolitano's *2nd Annual Address on the State of*

America's Homeland Security produced no extended metaphors even though metaphorical expressions (e.g., "stovepipes," "frameworks," "focus") were used throughout all of them. The lack of extended or complex metaphors in the formative documents suggested a deeper search for metaphor types but the limitations of manual analysis of documents of such length would have introduced too much subjectivity. As a result, the formative documents were relegated to a role akin to a control group—a benchmark for the anticipated presence of extended metaphors.

However, some seminal document data was produced by the *Quadrennial Homeland Security Review* language that alluded to metaphors similar to the machine, living organism, and brain types outlined in Chapter IV, even though these particular metaphors were not expressly articulated. Statements regarding borderless and unconventional threats,[238] the hybrid nature of threats,[239] an admonition that an evolution in thinking must occur and the interaction of homeland security elements[240] and a prescription for movement away from hierarchical models to more dynamic approaches[241] all indicated a need for homeland security conceptualizations other than what are currently in place but metaphors *per se* were not employed to achieve those conceptualizations. The *Quadrennial Homeland Security Review* appeared incognizant that it was advocating for at least two different metaphors and therefore made no attempt to reconcile them. Also in this aspect, the *Review* is grappling with the coherence and consistency elements of metaphor use noted in Chapter III: that when using multiple metaphors to comprehend phenomena, they must have some overlap in their entailments to make sense. While no obvious inappropriate mixing of the (implied) metaphors was noted, neither was there any connection between the machine and non-machine approaches.

2.   Subsequent Works

To circumvent potential and similar extended metaphor–poor results from the first stage of the research, a revision of the coding criteria was adopted for the analysis of the subsequent documents to create a richer, more workable data set. The second stage of the research looked at four homeland security works: *Does Homeland Security Exist Outside*

the United States, *Managing Risks in the Age of Terror*, *Defining Homeland Security: Analysis and Congressional Considerations*, and *Homeland Security Hash*. The modified criteria (outlined in Chapter I) were stricter and the following metaphoric types, in addition to extended metaphors, were sought:

1. *Analogy*—a comparison between two objects, or systems of objects, that highlights respects in which they are thought to be similar.

2. *Imagery*—is a *quasi-perceptual experience*; it resembles perceptual experience, but occurs in the absence of the appropriate external stimuli; functions as a form of mental representation.

3. *Simile*—A type of metaphor employed as an explicit comparison of one thing to another, built around *like, as,* or some other explicit comparative construction, for likening one thing to another.

4. *Extended Metaphors*—explanations or extrapolations of the metaphor used; unitary metaphorical likenings that sprawl over multiple successive sentences.

Once the subsequent documents were examined and their metaphors coded, the results were tabulated according to kind, frequency and document in which they were found. Results were analyzed to detect trends in similarity and identify patterns. Since the subsequent documents are shorter in length, a manual analysis (word by word examination of the documents' content) was possible. However, the available tools and time constraints precluded a return to the formative documents for an analysis of this type using the modified criteria.

The second stage of the document analysis produced a total of 407 metaphorical expressions in all categories of analogy, imagery, metaphor, and simile, shown in Figures 3–10.

3.   Totals by Document

a.   *Does Homeland Security Exist Outside the United States?*

- Analogies   32
- Imagery   36
- Metaphors   3
- Simile   0
- Total   71
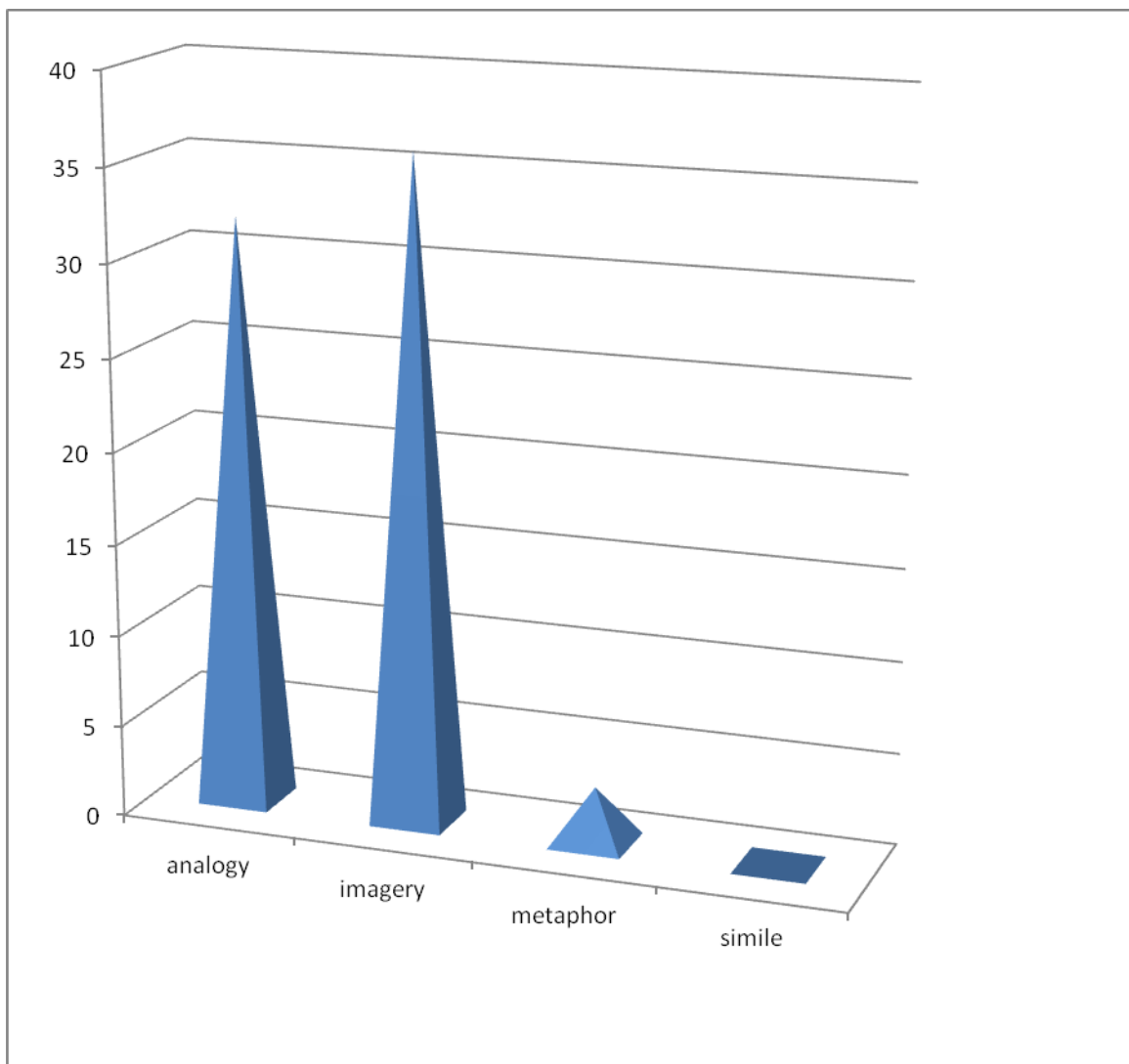
Figure 3.   Does Homeland Security Exist Outside the United States?

b. *Managing Risks in the Age of Terror*

- Analogies   28
- Imagery   45
- Metaphors   5
- Simile   1
- Total   79
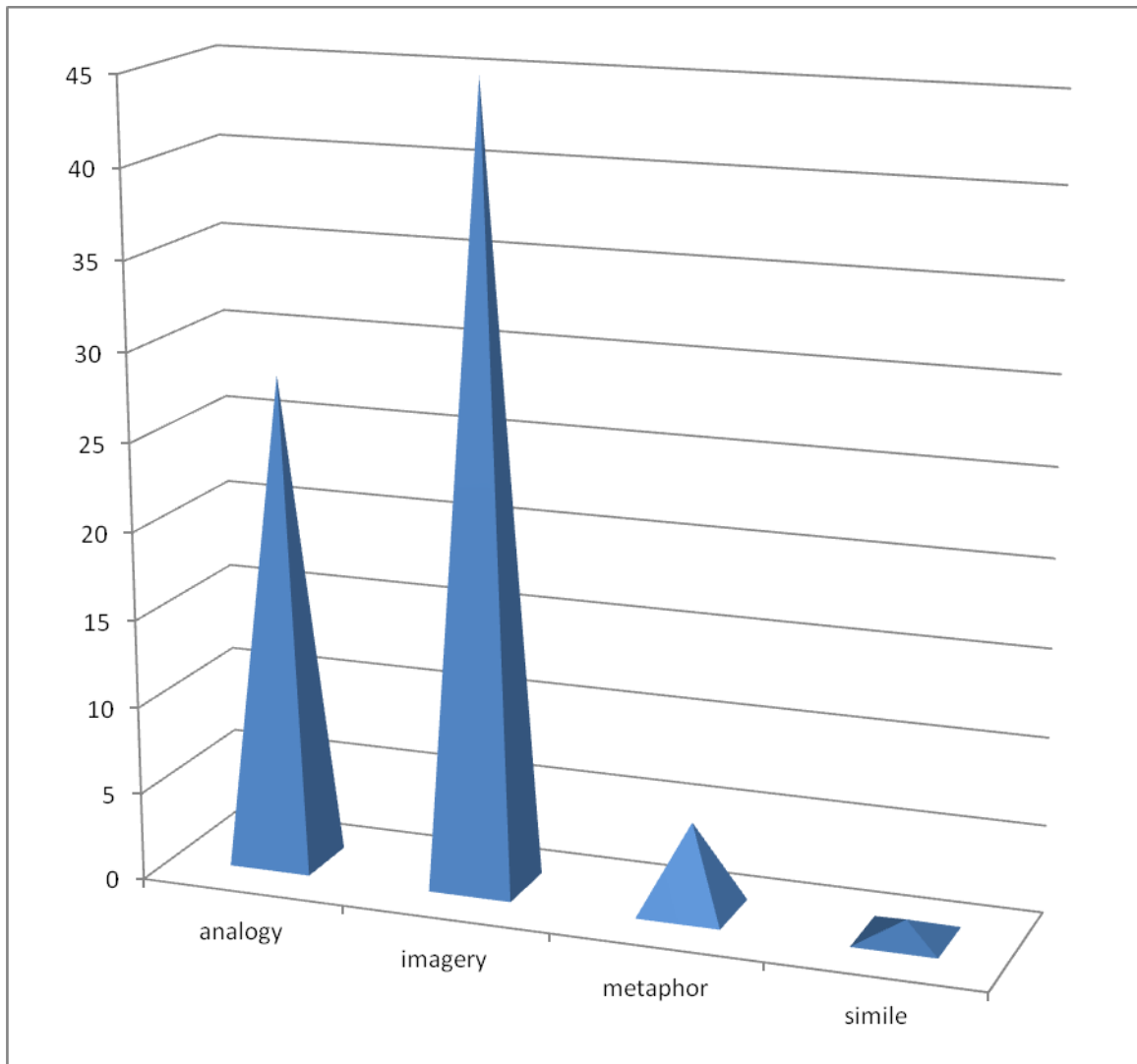
Figure 4.   Managing Risks in the Age of Terror

c. *Defining Homeland Security: Analysis and Congressional Considerations*

- Analogies 53
- Imagery 84
- Metaphors 16
- Simile 0
- Total 153
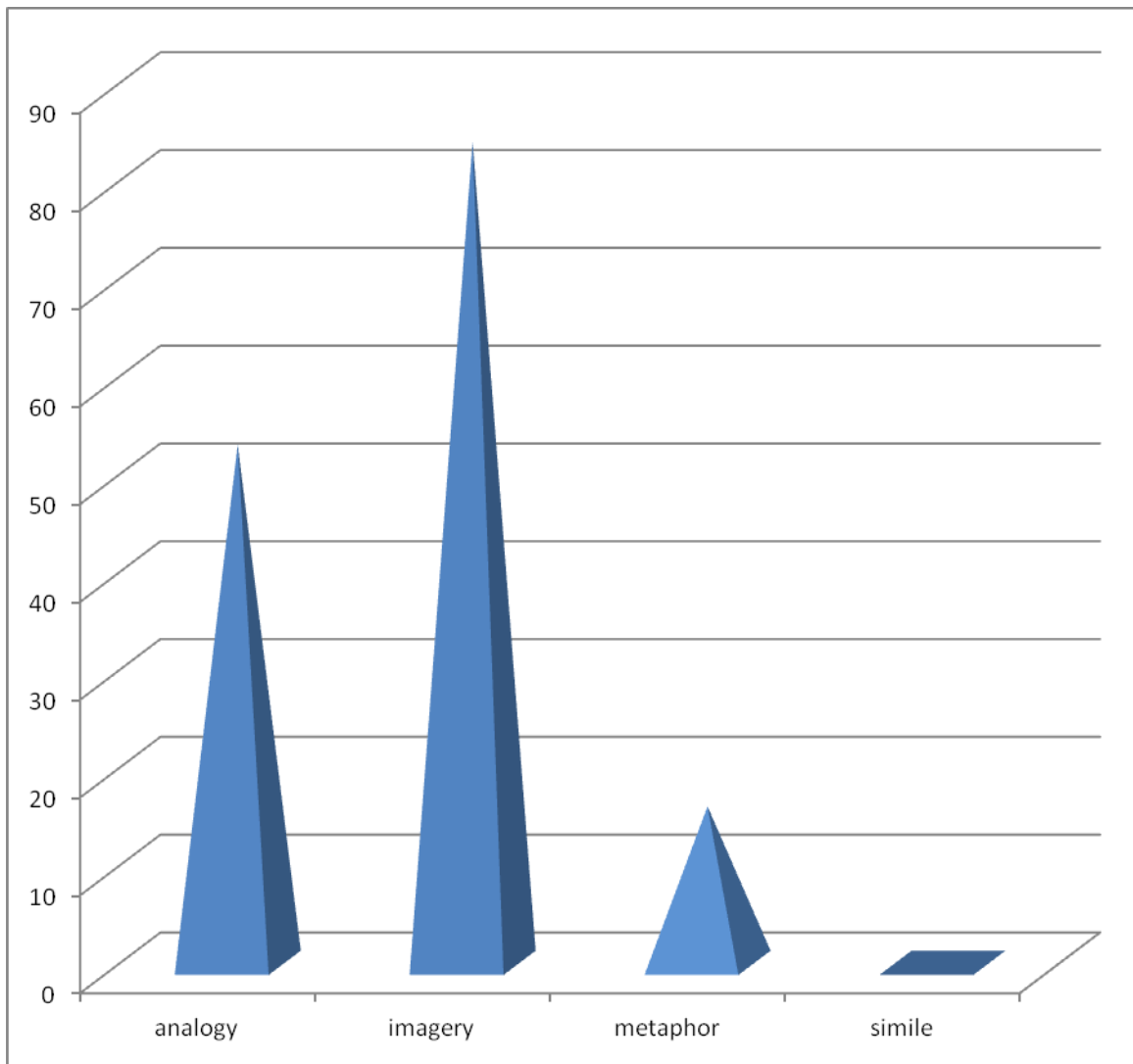
Figure 5. Defining Homeland Security: Analysis and Congressional Considerations

d.   *Homeland Security Hash*

- Analogies   31
- Imagery   63
- Metaphors   8
- Simile   2
- Total   104
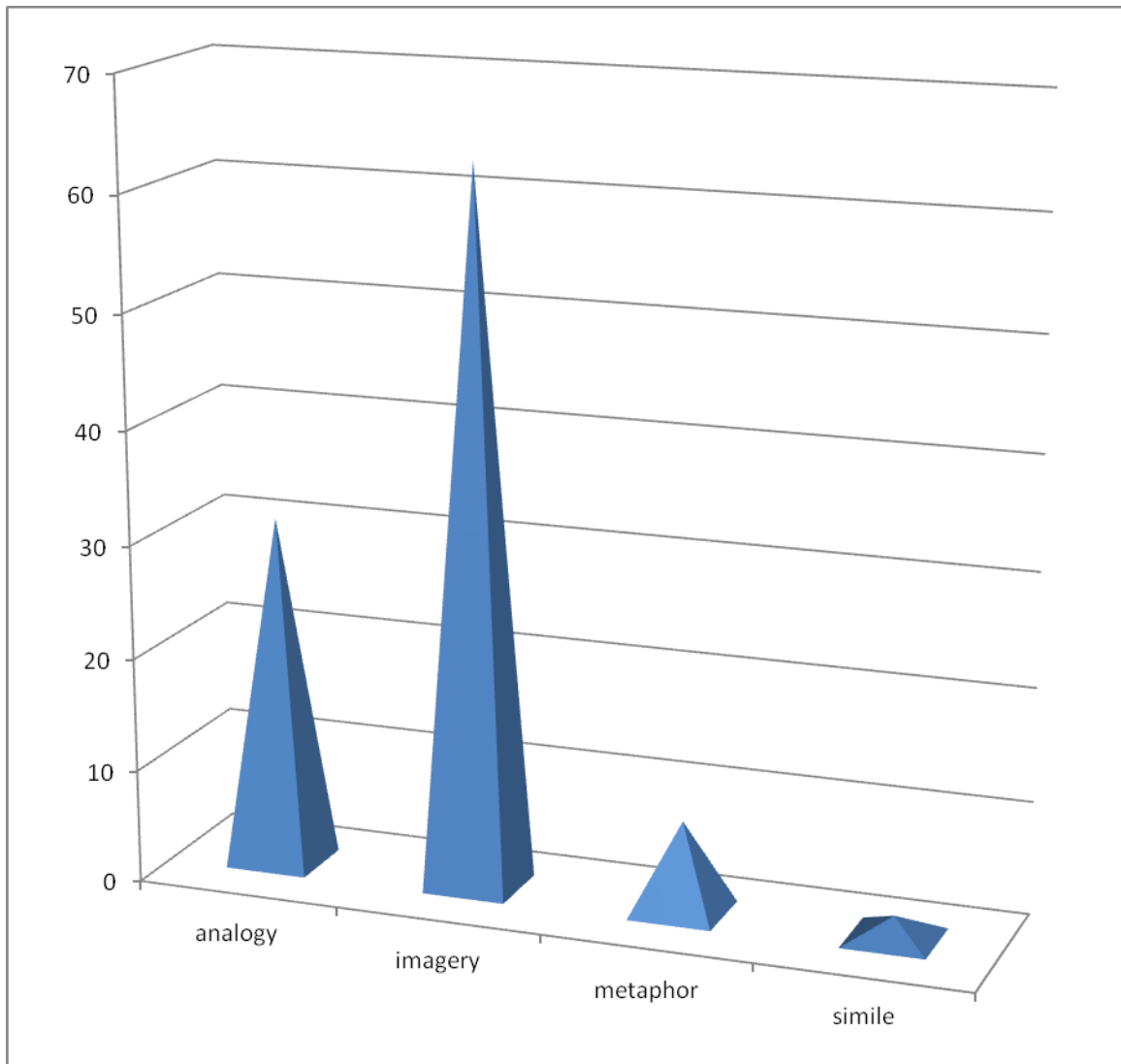
Figure 6.   Homeland Security Hash

4. Totals by Metaphor Type

a. *Analogy*

- Does HS exist outside 32
- HS hash   31
- Defining HS   53
- Managing risks   28
- Total   144
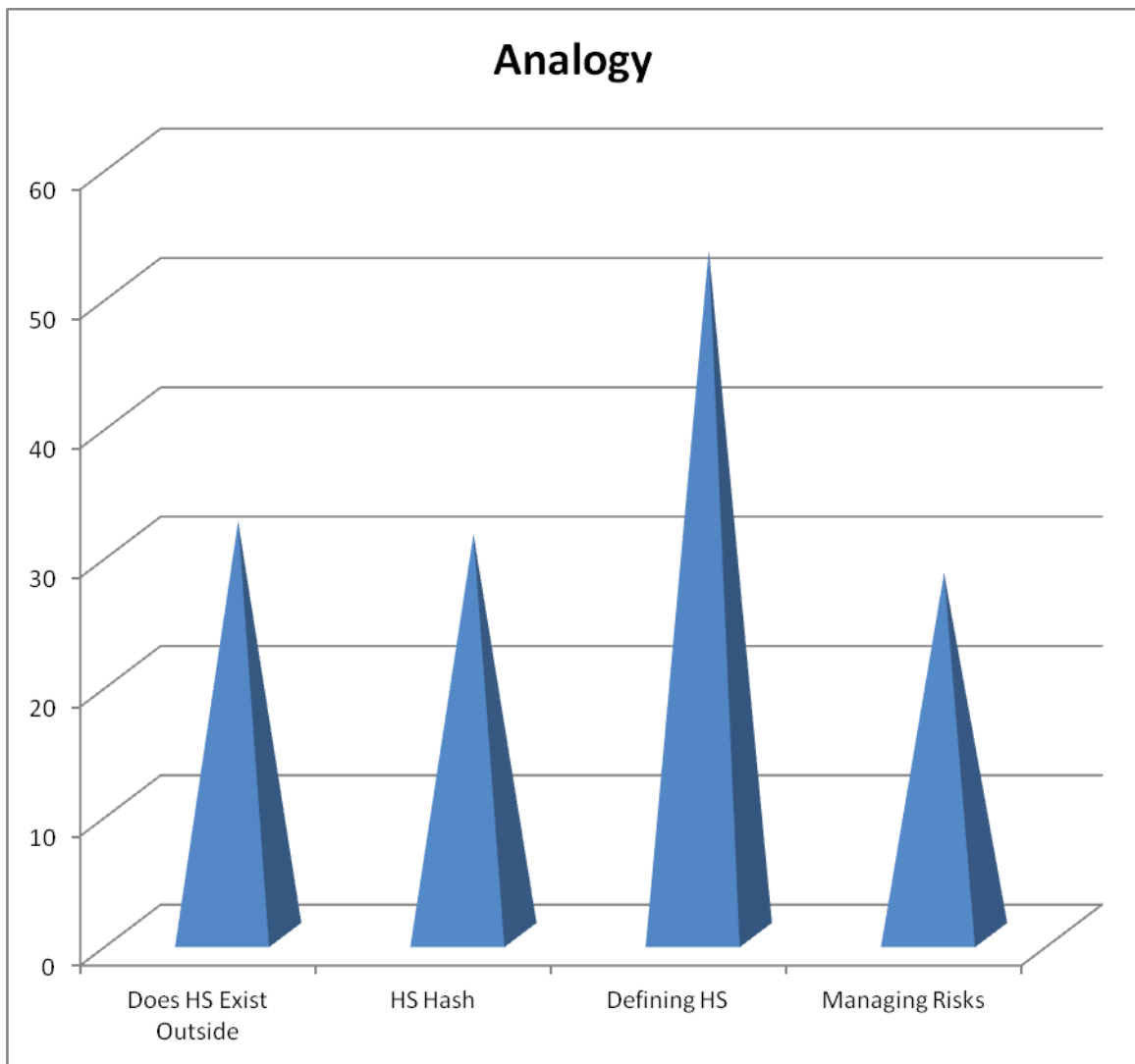
Figure 7.   Totals by Metaphor Type: Analogy

b.   *Imagery*

- Does HS exist outside   36
- HS hash   63
- Defining HS   84
- Managing risks   45
- Totals   228
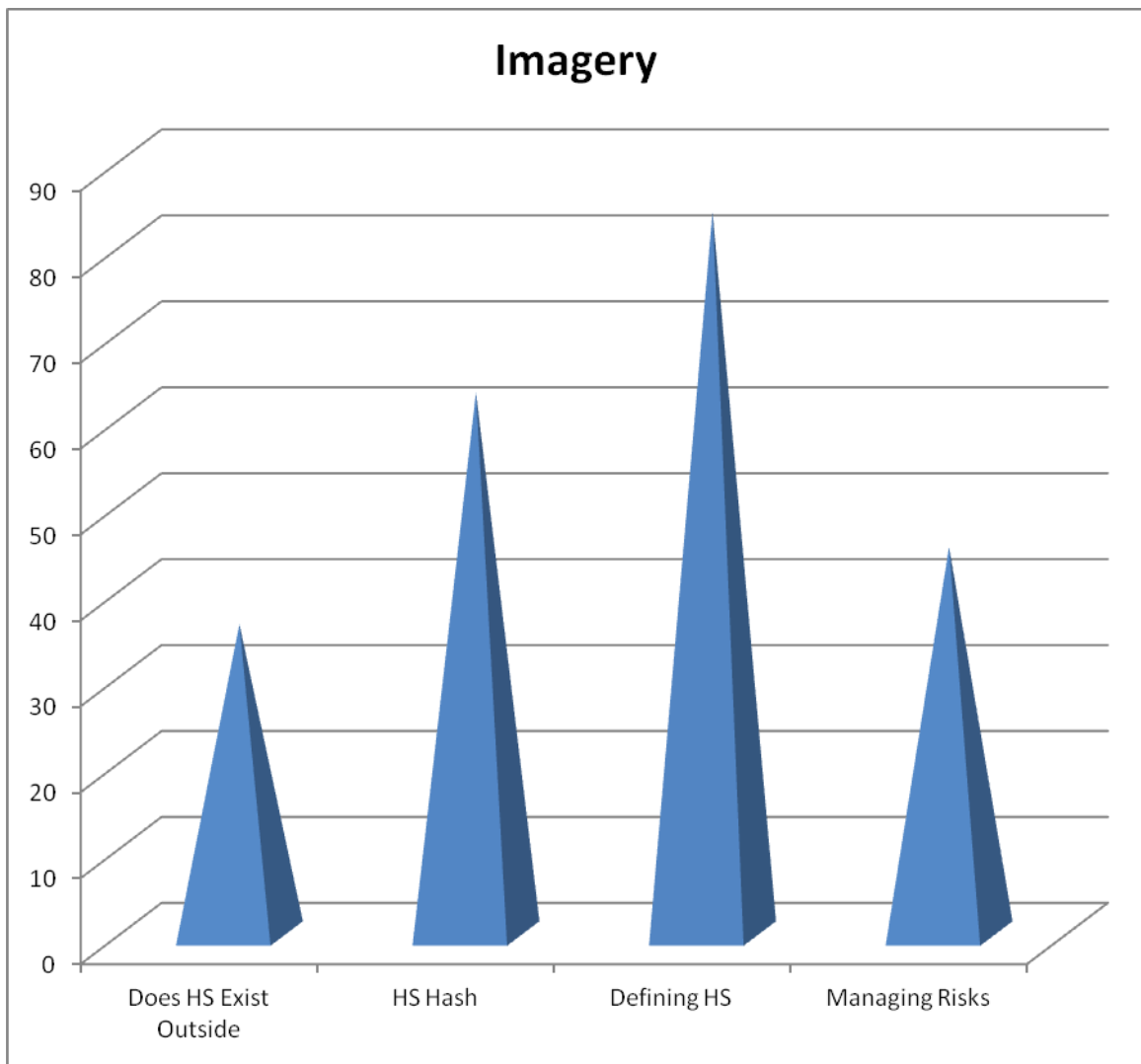
Figure 8.   Totals by Metaphor Type: Imagery

c. ***Metaphor***

- Does HS exist outside   3
- HS hash   8
- Defining HS   16
- Managing risks   5
- Total   32
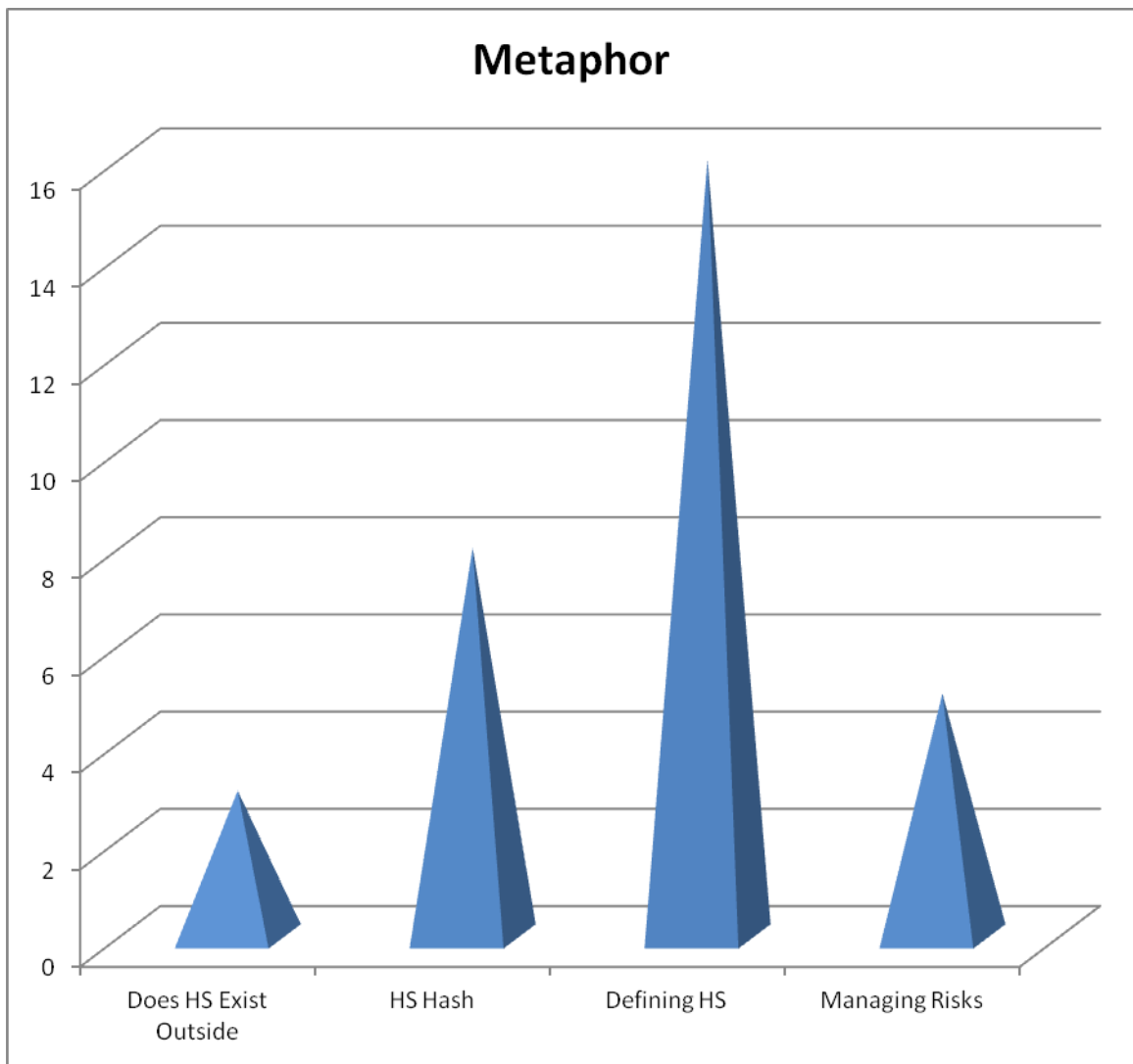
Figure 9.   Totals by Metaphor Type: Metaphor

5.   Totals by Category for All Four Documents

- Analogies   144
- Imagery   228
- Metaphors   32
- Simile   3
- Total   407
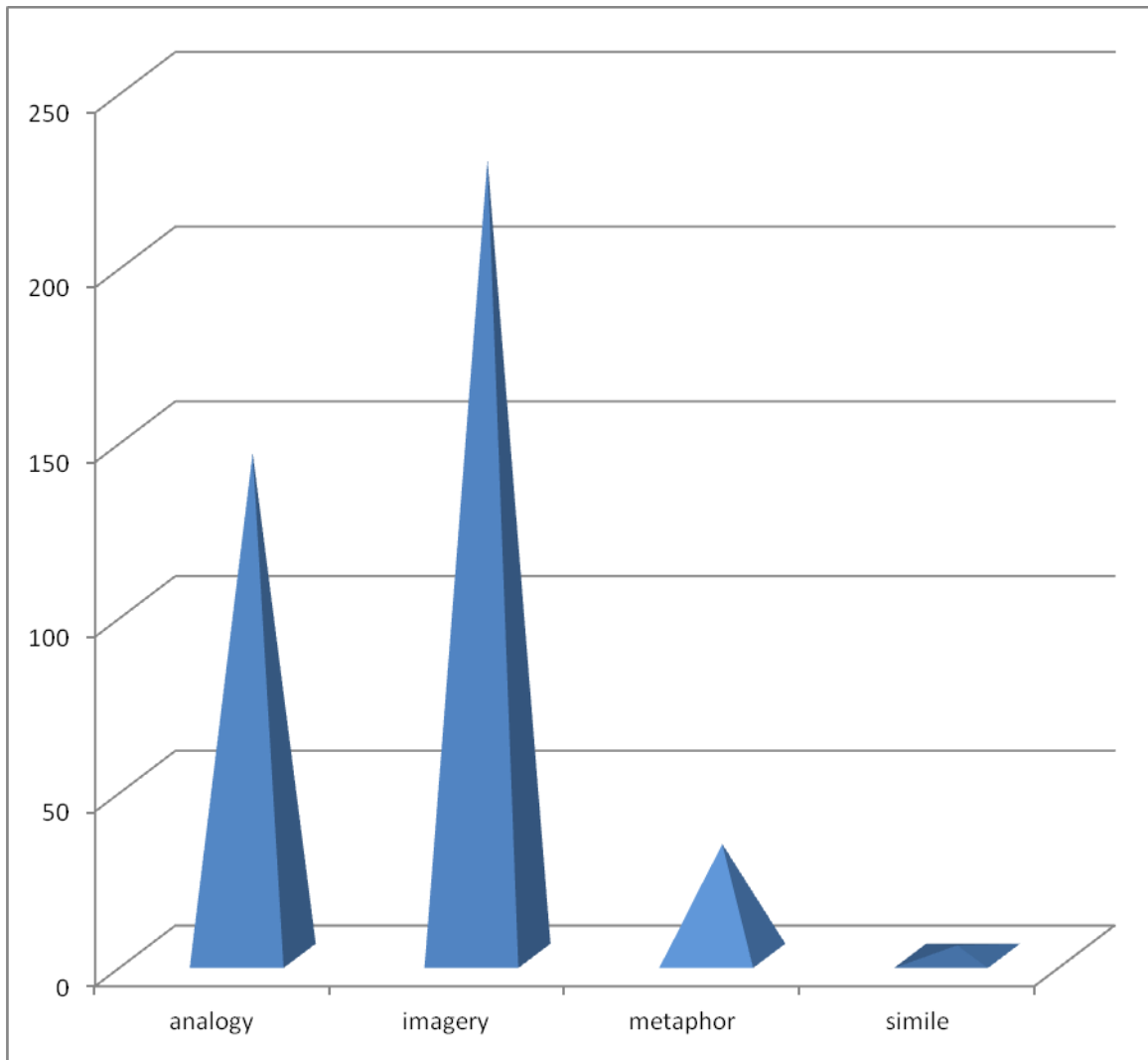
Figure 10.   Totals by Metaphor Type: All Documents

C.   ANALYSIS

1.   A Picture is Worth *How* Many Words?

As mentioned above, the analysis focuses on the subsequent writings since the coding criteria were modified to produce a richer data set. As can be seen from the raw numbers, metaphor tropes classified as images were the most common in all of the subsequent writings, followed by the analogies. The frequency of image metaphors used by various authors may have some explanation in the debates in cognitive science of the role images play in the acquisition of knowledge. Steven Pinker explains a study on the location of visual images by stating,

> We know that elephants are big and gray, take up space, and are at a particular location at any given time. But while I can imagine an elephant that isn't big and gray, I cannot imagine an elephant that doesn't take up space or isn't located somewhere (even if it is floating around in my mind's eye, it is *somewhere* at every moment) (original italics)[242]

David Hills' "Metaphor" entry in *The Stanford Encyclopedia of Philosophy* states:

> For cognitive linguists conceiving is a matter of manipulating unconscious mental imagery so as to let concretely pictured physical objects and situations stand in for the more abstract objects and situations we're endeavoring to understand[243]

Essentially, imagery experiences are comprehended by people as some form of reproduction of actual experiences or as anticipations of desired or feared future experiences. There are numerous theories on how image and thought and perception all interact, among them understanding mental imagery as:

quasi-perceptual conscious experience per se;

hypothetical picture-like representations in the mind and/or brain that give rise to quasi-perceptual conscious experiences.

hypothetical inner representations of any sort (picture-like or otherwise) that directly give rise to quasi-perceptual conscious experiences.[244]

It would serve not serve the purposes of this thesis to go into the details of all theorizations. However, one series of arguments can apply to the data uncovered in the research. This debate is known as the *analog-propositional* debate; an argument still

underway and apparently with no resolution in the foreseeable future.[245] On the *analog* end of the debate, it is held that mental representations that are experienced as images are, in effect, the same as pictures. They are intrinsically spatial representations of not just the objects portrayed in the picture, but also of the picture proper. Essentially, the picture is both a picture of a thing and a thing itself. One the other hand, the *propositional* side maintains that the mental representations are akin to linguistic accounts of visual scenes but lacking the innate spatial properties of their own. The picture is merely a description and has no other attributes outside of the description. The *analog-propositional* debate involves the most basic issues about the mind and thought, maybe even science and philosophy as well.[246]

Given the frequency of terms coded as images in the second stage of the research, especially when compared to the frequency of analogies, metaphors, or similes, it seems that the propositional position may offer the best explanation for the number of image words. That is, the linguistic descriptions of visual phenomena are the more preferred form of metaphor. Pinker offers further evidence of a predisposition toward images by referencing a study whereby students were asked to categorize physics calculations based on the similarity of the problems.[247] Students who had little schooling in physics grouped problems together according to the pictures in the calculation: pulleys were lumped with pulleys, inclines were matched with other inclined planes, etc.[248] Only the more advanced physics students categorized the problems according to the principles involved.[249] Humankind's hardwired abilities of vision and imagery is organized in spatial media at the most basic level: in the mind's eye.[250]

The above argument harkens back to Ludwig Wittgenstein's early works that held that thoughts and propositions are pictures,[251] and that the picture used to represent reality was part of the reality as well. Wittengenstein himself later repudiated this idea but in light of the *analog* position of the *analog-propositional* debate, there is some understanding that the picture cannot comprehend its own pictorial form.[252] The inability of the picture to recognize itself is mirrored in the dual metaphor approach unwittingly advocated by the *Quadrennial Homeland Security Review*.[253] As noted in the formative document analysis portion above, the *Review* pointed out a need for alternative

approaches but in the absence of appropriate metaphors, without a metaphoric lens, the *Quadrennial Homeland Security Review* cannot see "how to get there from here."

2. The Two Metaphors of the Quadrennial Homeland Security Review

The *Quadrennial Homeland Security Review* offered an odd juxtaposition of two different implied metaphors types: machine like methods and some other, more adaptable composition. The authors of the *Review* clearly see the need for the more flexible arrangements that the metaphors of living organisms or brains could offer, even though they did not explicitly advocate an application of those particular metaphors. Yet later in the document, it reverts to a machine metaphor bureaucratic problem-solving approach. For instance, early in the document, there were statements to the effect that:

> The accelerated flow of ideas, goods, and people around the world, while vital to supporting and advancing America's interests, also creates security challenges that are increasingly borderless and unconventional.[254]

> We are challenged by not only novel employment of conventional weaponry, but also by the hybrid nature of these threats…Moreover, we must remember that we face a determined and constantly adapting adversary.[256]

> …rapid technological change will continue to alter social, economic, and political forces, rapidly disperse information, and provide new means for our adversaries and competitors to challenge us.[257]

> The effort to strengthen the homeland security enterprise must begin with an evolution in how we think about homeland security itself. All of the most advanced, high-tech tools in the world will not transform our security unless we change our way of thinking, the way we approach individual, family, and community preparedness, the way we organize, train, and equip our professional capabilities, and the way all of these elements interact.[258]

> Moving from a top-down, command and control model to a more bottom-up approach in homeland security will require greater dynamic coordination—where individuals, communities, and other stakeholders at all levels understand their roles and are empowered with information, resources, and the capability to be part of our national effort to protect ourselves.[259]

These passages indicate an institutional recognition of a threat environment that is highly complex, that response to those threats cannot be "business as usual," and given all that is at stake, homeland security as a widely distributed and diverse system, has no single entity that is responsible for it or that directly manages all facets of the endeavor.[260] In essence, the *Review* recognizes that homeland security is not just about government action but that it draws upon the aggregate strength of the entire nation[261] and that America and the world are interconnected by networks essential to the economic prosperity of the nation. Therefore, fostering a society that is robust, adaptable, and can rapidly recovery is the path to resilience.[262] The need for a non-machine metaphor (perhaps along the lines of the living organism or brain) is implied.

Yet contrary declarations exist. For example, the *Review* states:

> Creating capable communities will require that we establish clear standards for readiness, promulgate accurate and timely information to communicate risks, make opportunities for training, education, and exercises available, and ensure that critical capabilities—such as effective interoperable communications—are in place and functional.[263]

> In addition, there is a need to enhance the skills and abilities of homeland security professionals as part of the larger national security professional development effort, expand the partnerships upon which the homeland security enterprise depends, develop technologies that support the achievement of homeland security mission goals and objectives, and institutionalize processes that will support effective and informed decision making and unity of effort within the enterprise. Each of these aims strengthens decision making, identification of priorities, and successful execution of the homeland security missions.[264]

> Stakeholders must now work to prioritize and identify the capabilities needed to achieve the goals, objectives, and outcomes identified in the QHSR, tie these requirements to resource allocation priorities, set performance criteria, and validate the allocation of roles and responsibilities.[265]

> The division of operational roles and responsibilities among Federal departments and agencies for various homeland security mission goals and objectives emerged as a major area requiring further study following the QHSR. Going forward, an analysis of roles and responsibilities across the homeland security missions would help resolve gaps or unnecessary redundancies between departments and agencies. Meaningful engagement

by representative stakeholders from across the homeland security enterprise, including State, local, tribal, and territorial governments, must be part of the process.[266]

In contrast to earlier passages, these portions of the *Review* look to processes, institutionalization, divisions of labor, elimination of redundancies, prioritization, and the development of standards: the machine metaphor attributes of bureaucracies outlined in Chapter IV.[234] Throughout the *Quadrennial Homeland Security Review,* there are several additional instances of vacillation between the call for flexibility and adaptability and the traditional, machine-oriented approaches.

D. CONCLUSIONS

The research in this thesis produced an emphasis on image tropes and this emphasis may be the result of a natural predilection of humans (since most of our sensory input is visual), or it may be a subconscious desire of the authors: when it comes to homeland security, there is not much to actually visualize so imagery is used to "see" it. A more comprehensive approach to understanding the use of images in homeland security materials might be a subject for further research.

The dearth of extended metaphors (metaphors that are expanded and described) in any of the writings analyzed indicates an entrenched pattern of thinking regarding the homeland security enterprise: The seminal documents are written *by* machines; the subsequent works are written *about* machines. The documents analyzed, being *of* machines, indicate that while those same machines might recognize that there are other non-mechanistic approaches needed, by virtue of their being machine—like entities they cannot address a different conceptualization of themselves. Essentially, none of the documents analyzed addressed how metaphors *per se* can aid in the conceptualization of the homeland security enterprise. While some, such as *Homeland Security Hash*, had a metaphorical title and the *Quadrennial Homeland Security Review* danced around the application of different metaphors, none of the documents actually came right out and stated something to the effect of, "Various metaphors can help us see ourselves."

This goes to the picture form in the *analog-propositional* debate being unable to comprehend itself as a picture. It would be as if a person had to believe that their thoughts were not actually in their head but emanated from somewhere in their stomach. One might be able to imagine such a state but believing it and maintaining that belief over time would be a much harder objective.

Therefore, for the homeland security enterprise to move beyond a singular reliance on the machine metaphor it will have to actively acknowledge that metaphors provide a tool for alternative conceptualizations.

Along these lines, a homeland security epistemology has been advanced by Christopher Bellavita in his *Waiting for Homeland Security Theory.*[268] He diagrams what counts as data and what are considered methods of inquiry—Figure 11 serves as the basis for understanding the epistemology. At the most simple level is the energies that people expend on a daily basis. Here, individuals are confronted with easily recognizable events but events whose bearing on the larger enterprise is minimal. As one move up the pyramid, the layers become increasingly sophisticated and more challenging to discern but their impact and significance on the enterprise is greater.[269] Using this epistemological representation, the absence of extended metaphors in the document analysis indicates that the homeland security enterprise is struggling to comprehend itself in the sub-metaphor strata of the pyramid. On the other hand, if the enterprise can make the transition to the metaphor level and recognize that the machine metaphor alone is inadequate for enterprise missions, it will have traveled a long way toward acquiring the robust, flexible, and adaptable structures and networks espoused by *Quadrennial Homeland Security Review* and other homeland security documents. The enterprise will be headed toward a true paradigm shift. See Figure 11.
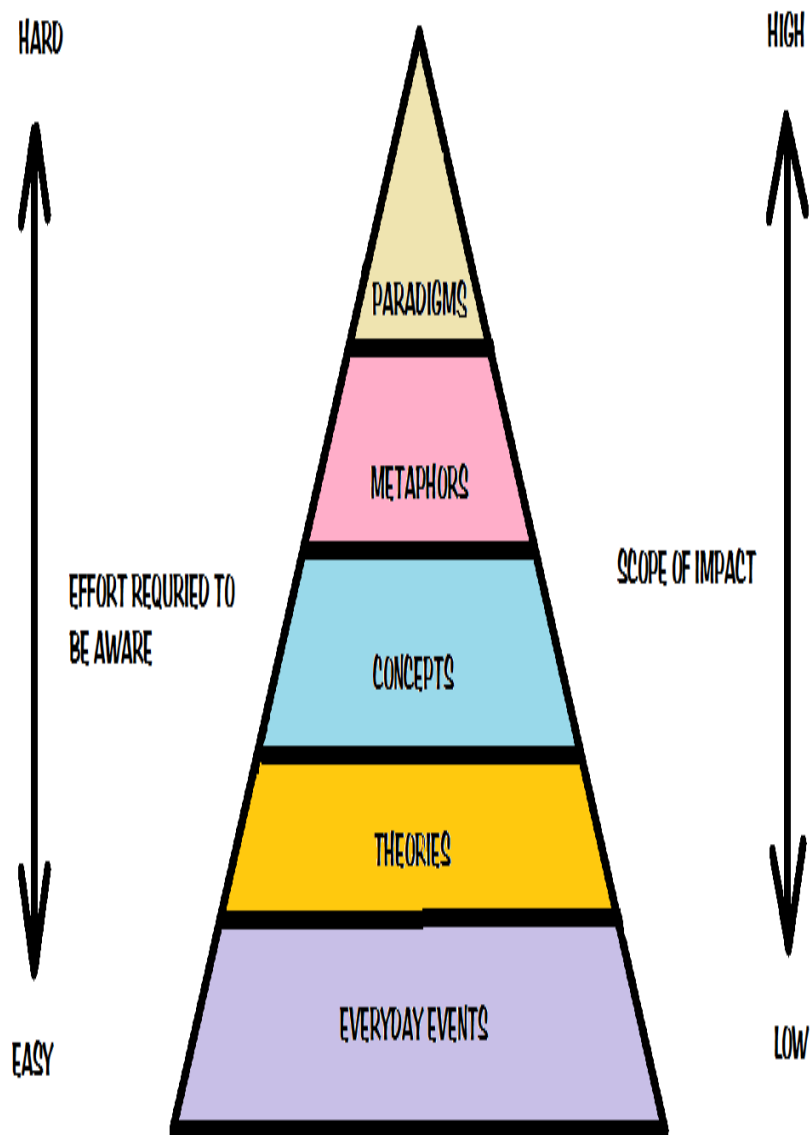
Figure 11.   Homeland Security Epistemological Pyramid[270]

Paradigms are a community's, particularly an academic field's, shared concepts, beliefs, images, principles, theories, conditions, and observances that comprise the community's perception of reality. Paradigms help the community see the world, structure explanations of it, and provide a means for making judgments and problem solving. This means that paradigms impact one's awareness of new information or phenomena, how it is perceived, comprehended, and processed, and the practices adopted

in response to the new information and/or phenomena.[271] Alas, movement away from the known paradigm to some unknown, yet to be defined paradigm may prove to be an unsettling prospect for some in the homeland security field.

Fortunately, the machine metaphor does not need to be dismantled; it merely needs augmentation in the form of additional metaphors. Thomas Kuhn, in *The Structure of Scientific Revolutions* states:

> In principle, a new phenomenon might emerge without reflecting destructively upon any part of past scientific practice. Though discovering life on the moon would today be destructive of existing paradigms (these tell us things about the moon that seem incompatible with life's existence there), discovering life and some less well-known part of the galaxy would not. By the same token, a new theory does not have to conflict with any of its predecessors. It might deal exclusively with phenomenon not previously known, as the quantum theory deals (but, significantly, not exclusively) with subatomic phenomenon unknown before the 20th century. Or again, the new theory might be simply a higher level theory than those known before, one that link together a whole group of lower-level theories without substantially changing any.[272]

While it was not explored in the research, one can surmise that in all likelihood, any articles found in homeland security trade publications would be writing *to* machines. In contrast, general business writings often resort to metaphor to explain difficult and/or new concepts. A visit to the business section of any local bookstore reveals dozens of books with metaphoric titles: *The Icarus Deception*, *Liar's Poker*, *Our Iceberg is Melting*, *How Full is Your Bucket?*, *and Blue Ocean Strategy*, to name a few. If titles such as these are any indication, general business has moved well beyond the machine metaphor in its quest to capture a greater market share of whatever venture it is engaged. But the entrenchment in the traditional machine metaphor has enormous implications for homeland security, since many of the entities that make up the enterprise are government bureaucracies. One needs look no further than the similarities between the nomenclature of the National Incident Management System and classical management theory (e.g., "span of control," "unity of command") to see this in effect.

Since many documents, particularly the *Quadrennial Homeland Security Review*, recognize a need for new approaches, it is time for policymakers to formally adopt

metaphors as tools for conceptualizing those approaches and putting them into practice. It is hoped that this thesis will provide an impetus for doing so. At the very least, policymakers should identify and critically examine the homeland security enterprise metaphors currently employed.

E.   SUGGESTED FURTHER RESEARCH

To get a comprehensive understanding of how extensively metaphors are used in homeland security materials, a computer programmed document analysis would be in order. Such a program would help to minimize researcher bias and would create a larger and more precise data set if were designed to look for specific words in specific instances. As already mentioned, the manual research process has an element of subjectivity and this could subsequently influence the findings and analysis presented. For instance, what one researcher might consider a common metaphorical expression and consequently not code at all, another may find worth coding. Perhaps surveys could be conducted of homeland security professionals to create consensus on the nature of certain words (e.g., whether a certain term would be considered common, or a machine metaphor, or a living organism metaphor). For example, machine oriented words and phrases such as "engine," "leverage," "geared toward," etc., could be sought out. The occurrence of certain words, such as those listed as common and therefore not coded, could be also be tabulated so as to determine how frequently they appear and/or which are more common than others. Likewise, words could be selected in proximity to other words that fit in specific metaphors as well as homonyms and synonyms for coding purposes. Also, with such a program, a much broader and varied selection of homeland security writings could be analyzed.

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VI.   ALTERNATIVES

Leaders should lead as far as they can and then vanish. Their ashes should not choke the fire they have lit.[273]

H.G. Wells

Metaphors as conceptual tools have not been largely adopted by the homeland security enterprise. Even though some writings refer to the need for different approaches, the bureaucracy/machine/literalist philosophy remains the dominant paradigm. For new and alternative metaphors to aid in the conceptualization of homeland security, they will have to address the grounding, systematicity, coherence, and consistency factors noted in Chapters III and V.

In this chapter, alternative applications of the living organism and brain metaphors are advanced as well as an alternative metaphor that incorporates the machine metaphor. The advantages and disadvantages of each will be explored as well. Also, an implementation plan is proposed for how homeland security practitioners can play a role in deciding which metaphors are developed and adopted.

A.   RAGE AGAINST THE MACHINE

Almost any group of people can relate to what it means to exist as part of a formal hierarchical and bureaucratic structure. Even when other options are available, the bureaucracy is so ingrained that it is taken for granted as the benchmark for thinking and talking about organizations.[274] As demonstrated above, there are other alternative perspectives for conceptualizing organizations but homeland security writings, while laudably espousing a desire to develop more nimble an robust organizations, do not demonstrate an ability to embrace the philosophy necessary for the creation of those organizational metaphors. Since 9/11, no especially innovative policy approaches have been advanced. The creation of the Department of Homeland Security and the adoption the National Incident Management System do not qualify: they are simply the traditional/machine/bureaucratic organization responses to new challenges.[275] The *Quadrennial Homeland Security Review* recognizes the danger of the "hybrid threat,"

whereby enemies of the United States can "employ combinations of tactics, technologies, and capabilities to an asymmetric advantage."[276] Yet, no concrete actionable methods for thwarting those threats are apparent in the writings analyzed.

General Stanley McChrystal stated that the fights in Afghanistan and Iraq against decentralized foes demonstrated a need for the network qualities of knowledge, speed precision and unity of effort. These attributes needed to coexist with traditional capabilities for overwhelming force, efficient use of technology and military professionalism.[277] Decentralized organizations are described in Brafman and Beckstrom's *The Starfish and the Spider*: they have no clear leaders, no hierarchy, no headquarters and if leaders do emerge, they lead by example, not by edict.[278] Because of their open nature, they are:

> …wonderful incubators for creative, destructive, innovative, or crazy ideas. Anything goes. Good ideas will attract more people, and in a circle they'll execute the plan. Institute order and rigid structure, and while you may achieve standardization, you'll also squelch creativity. Where creativity is valuable, learning to accept chaos is a must.[279]

Because of these features, decentralized systems can mutate quickly and adapt to changing circumstances.[280]

In his presentation, *The Power of Networks: The Challenges of Mapping an Increasingly Complex World*, Manuel Lima traces the history of the tree metaphor as humans sought to understand the relationships among various concepts and endeavors.[281] Conceptualizing through a tree device was a manifestation of humankind's desire for balance, simplicity, order, unity, symmetry, hierarchy, etc.[282] Instead, Lima claims a true paradigm shift is at hand: the metaphor of the tree cannot accommodate the complexities of the modern world.[283] As an example, he notes that cod species in the north Atlantic interacts with over 100 other species and that no tree model can cover this kind of interconnectedness.[284] Alternatively, he looks to rhizomes, a structure defined by Felix Guattari as "…an a-centered, non-hierarchical, non-signifying system without a general organizing memory of central automaton, defined solely by a circulation of states."[285] Instead of the "tree of life" metaphor, greater understanding can be achieved through a "web of life" model,[286] similar to the rhizome structure in Figure 12:

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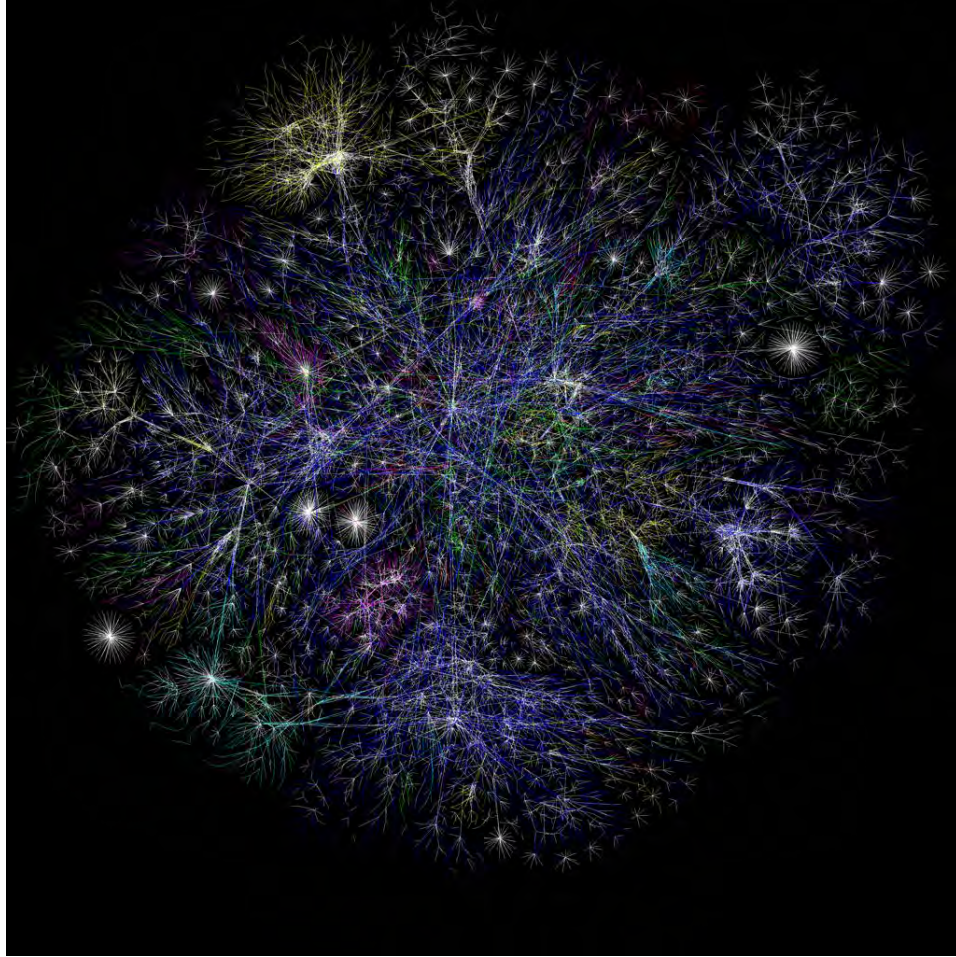
Figure 12.   Rhizome Structure[287]

The rhizome structure as applied to organizations involves a shift from the traditional linear and mechanical approaches of the machine metaphor to "network thinking" of innovative partnerships, shared ethical and moral principles, and collective intelligence. A movement toward a modern-day renaissance human is warranted: polymaths who know a little of everything or who can at least readily access other knowledge. For Lima, "specialization is for insects."[288]   As applied to the homeland security enterprise, Linda Kiltz and James D. Ramsey, state in their article, *Perceptual Framing of Homeland Security*:

> One of the greatest strengths of a network structure is its ability to bring together a group of experts and resources to solve problems in a rapidly changing and shifting environment. These capabilities are critical in preventing, deterring, and responding to the vast array of threats to the

homeland. Homeland security is a shared responsibility with Congress, state and local governments, the private sector, nonprofit organizations, and the American people.[289]

Here then, is another set of competing priorities for the homeland security enterprise. Not only does it have to balance the contradictory needs for security against the rights of individuals guaranteed by the constitution, *it must also create the decentralized, emergent, self-organizing, rhizome structures needed to evolve and meet a constantly changing threat environment while maintaining the command and control ability critical in responding to the consequences of disasters and terrorist attacks.* A homeland security enterprise that fosters creative thinking, provides for safe-fail experimentation, promotes inclusiveness of all participants regardless of rank, size, financial means, or position, and cultivates an environment for the free, non-linear, and non-judgmental exchange of ideas and methods, must also be able to swing into action quickly and efficiently, employ lessons learned and bring as many appropriate resources to bear on specific problems. For the enterprise to meet these competing priorities, a conceptual metaphor other than or at least in addition to, the machine metaphor must be advanced.

B.   ALTERNATIVE APPLICATIONS

1.   The Genus Metaphor

The living organism metaphor presented in Chapter IV offers an alternative to the mechanistic metaphor, which appears so pervasive in the homeland security enterprise. The continual and dynamic interaction with the environment and the open collaborative/competitive relationship among organizations allows for more adaptability to constantly evolving threat circumstances. However, Geerat Vermeij points out in his essay, *Security, Unpredictability and Evolution*:

> In human affairs, as in the affairs of nonhuman life, there has always been a tension between top down control the exercise by a powerful executive and more distributed controls invested in several bodies…Governments tend toward a more centralized, more totalitarian, and therefore less adaptable structure when they perceived threats, real or imagined… More distributed power is viewed as inefficient, leading to slow and perhaps inconsistent response.[290]

However, the "whole system" approach does not concern itself with pre-conceived designs or desired specific outcomes. The question is then, how do machine organizations "come to life?"

Evolution moves organisms from general traits to specialist traits and eventually certain specializations can give rise to whole new species. These same evolutionary processes may also be seen in the human development of infrastructures and institutions. Most of the humans populating the world have evolved from hunter-gatherers to specialists that do not directly produce food for their own consumption (but who now work for the homeland security enterprise). Natural pressures force organisms to constantly adapt to their environmental conditions or die. These same pressures are also compelling their enemies to constantly change or they too will die. And these incessant adaptations may only result in an organism staying in the same strategic position relative to its enemies.[291] Highly adapted species are the masters of the ecological niches they inhabit and can exploit specific resources efficiently.

As examples from the non-human world, the koala and the panda rely respectively on eucalyptus and bamboo exclusively for food and shelter. Nevertheless, even these successful organisms are considered delicate and may face extinction if they are unable to cope with drastic or rapidly changing circumstances. Specialists are at a disadvantage when their food sources begin to decline.[292] In a more dynamic (read dangerous) context, evolution favors species with more general traits (i.e., those able to live in a wide variety of climates and locations, able to digest a diverse diet). Organisms with these general traits are less efficient at utilizing particular resources but can make use of a wider range of resources. And *homo sapiens*, a generalist organism, has become the most successful land dwelling species in the history of the earth. Evolution has no endpoint; there is no long term design or end state to be achieved. It just putters around with what it has at hand, favoring those characteristics that help a given organism, at a given time, in a given environment successfully pass along its genes to the next generation.[293]

However, an understanding of evolution can help to envision, predict, and achieve consensus on the ideal configuration of the homeland security enterprise. For example, in

early human evolution, humanity was scattered throughout the Old World in small and semi-isolated bands, events that impacted regions and/or collections of tribes would have required those bands of people to adapt to those events or die. However, those tribes not directly affected by an event might have learned from the mistakes or misfortunes of less successful groups and adjusted their behaviors accordingly. In essence, humanity of that era was a loosely connected series of experiments—success or failure in any one part may have provided the key to success in other aspects, thereby ensuring the survival of the species as a whole.

Therefore, an approximate answer of what would be the ideal form of the homeland security enterprise would be to consider it as a largely generalist "genus." This genus should have the capacity to ascertain that specialist "species" (with their respective talents) that should be brought to bear on threats and changing circumstances. The concepts of social and biological evolution could be harnessed and used to create a more nimble organization and would move away from traditional and hierarchical arrangements. In short, the "genus" of agencies, jurisdictions and commercial interests involved in homeland security could be likened to the clans of early humans scattered throughout the world. There are connections and hereditary relationships among them but they are not deliberately orchestrated and instead act as "nodes of survival."

It is also important to remember that natural selection does not operate through individuals but through populations, communities of interbreeding individuals. In nature, most populations have a tremendous reproductive capacity and the phrase "survival of the fittest" refers more to an *elimination* of weaker members of a population than to some selective process of "fitter" members.[294] It is in this context that the populations of the various homeland security agencies and jurisdictions spread throughout the nation can serve the purposes of an artificial selection imposed by the mission of homeland security. This is not to say that unsuccessful homeland security enterprise members will necessarily become extinct, but rather those that are more adaptable can offer survival and success strategies to the rest of the enterprise. The genus metaphor is similar to a sieve: methods, arrangements, and preparations that work will remain in the sieve, those that do not will fall away.[295] When looking at generalization over specialization, though,

some situations arise are non-traditionally managed: firefighters sometimes have to subdue unruly people; ordinary citizens are often called upon to assist responders in non-technical ways; police officers sometimes run into burning buildings to save citizens. A genus metaphor sees these non-traditional behaviors in a selfless light and not as threats to individuals and entities in determining who is responsible for what. Organisms, by forming symbiotic relationships (in a multitude of forms), can survive and thrive in the presence of threats.[296]

From a social evolutionary standpoint, organizations develop as the result of political-economic pressures. Commercial interests look to reduce inefficiency through the elimination of redundancies, cost savings, and the intensive use of available resources. Politically driven factors include the proper stewardship of public monies and the inclusion of infrastructures and activities in certain geographic locations, which are beneficial to constituents and taxpayers. The political-economic expression differs from the biological processes in that they are the result of conscious choices made by the society versus the inherent trajectory of evolution from generalization to specialization. In the anthology, *Natural Security: A Darwinian Approach to a Dangerous World*, Raphael Sagarin states in his essay, *A Holistic View of Natural Security*:

> Yet, whatever the true relative contribution of evolutionary forces to societal outcomes, it is clear that through our cognition, behaviors, and societal institutions, we have found ways to dampen or sidestep relentless and merciless environmental control faced by most organisms on earth. On one hand, this is a great detriment. No organic, self-organized force ensures that our systems are adequate for survival. On the other hand, it can be seen as an opportunity. We have created space in which we can analyze security problems from a detached standpoint, anticipate likely outcomes, and design specific responses based on that information.[297]

By cooperating as a genus, the homeland security enterprise can define itself not as a collection of individual parts with roles and specializations sharply defined roles but with "all for one and one for all" egalitarianism.

a. Challenges for the Genus Metaphor

All living systems preserve themselves through means in which their existence is maintained and the system's identity is conserved. But these same means that keep the system operating can also serve as barriers to transformation and development.[298] Organizational systems also parallel these processes and a group's social identity lends itself to the construction of these barriers. Institutionalization and habitualization inherently restrict flexibility of action.[299]For instance, the social identities of police and fire organizations result in each attempting to promote their power vis-à-vis the other. Thus, in complex or fast-moving incidents when efficient and accurate information is at its most critical, one group may share more information with members of their own (a product of in-group bias) as compared to members of another organization (negative bias toward the out-group). These sharing biases may exclude the out-group from receiving information that is vital to their operation,[300] or perhaps even their survival.

Moreover, part of the difficulties in defining the homeland security enterprise is that there are no clear boundaries for where it begins and ends. At what point does a law enforcement matter morph into a homeland security event? At what point does a national security situation become simply a homeland security issue? It could be argued that every national security incident/event has a homeland security element but not vice versa. And every homeland security incident/event has a law enforcement component but not vice versa. While there may be no clear bright lines demarcating the portions along the continuum, there can be a "zone" where responsibility for certain functions may be blurred. The borders of the boundary zone may also be fuzzy and the width of the zones may vary depending on the specifics of the situation (actors, timing, incident/event type, etc.) These zones are not immutable and may shift over time. They may not even be realistically measurable. Moreover, certain actors will perform better in certain roles. Despite a desire to approach the enterprise as "all for one and one for all," the skill sets of various players will make them more valuable to the enterprise in different contexts. If the egalitarian approach of the genus metaphor is carried too far, the right resources may not be brought to bear on the problems faced.

Determining who best does what within these zones may be similar to finding the "missing link" in human evolution—that is, if a complete and unbroken fossil record were available, there would be no distinct point at which one could say, "This is human and this is not human." In paleoanthropology, the problem is compounded by different experts using disparate criteria for making those determinations,[301] and whether they are "lumpers" or "splitters" comes into play. Do they ignore large differences and lump seemingly disparate entities together or do they focus on small distinctions as justification for making divisions among entities? Therefore, as applied to homeland security, a region of argument may exist (due to various stakeholders having their own biases in criteria), but toward each far edge should exist a definite "homeland security" and a definite "not homeland security." The answers are usually found by how contradictions are reconciled in practice and not at the lumped or split extremes.[302]

Therefore, another problem with the genus metaphor is that the homeland security practitioners become missing links somewhere in the middle with their roles and purposes blurred. Problems of boundary apply to primarily to functions of agencies and not the agencies themselves that seem to have a better sense of their operational boundaries vis-à-vis their counterparts. These missing link boundaries also may apply to jurisdictional and federalism issues as the problems of mission creep and redundant functions are relevant to the absence of defined boundaries. If some entities continue to cling to bureaucratic machine-type philosophies in an attempt to ensure the survival of their own species, then they can disrupt the survival of other (if not all) species in the genus. Modern humankind's last known interaction with members of its own genus, *homo sapiens neanderthalensis*, resulted in the Neanderthals becoming extinct. Loyalty to the genus versus loyalty to the species may be extremely difficult to engender.

2.   The University Metaphor

Another alternative metaphor application to homeland security is modification the brain metaphor. An advantage of a brain organization versus a machine organization is that a brain can withstand a tremendous amount of damage yet not suffer a proportionate loss of cognitive power, at least once brain cells have had an opportunity to reorganize

themselves in response to the damage.[303] In contrast, a machine can only endure minor disruptions before it fails to function entirely. As mentioned in Chapter IV, a limitation of the brain metaphor is that the human brain is not as thoroughly understood as living organisms and machines and, consequently, has not been genuinely applied to organizations in the same way as mechanistic and organism metaphors. Nevertheless, since it is human brains that are attempting to comprehend the brain metaphor, homeland security can become a laboratory for perceiving the enterprise as a brain. Given the need for constant learning and adaptation to counter threats that are also constantly learning and adapting, the decentralized, self-organizing feature of brains is mirrored in the sheer numbers of stakeholders in the enterprise.

In this metaphor, homeland security becomes a learning entity—a "university of operations." Ideas and theories are pushed out and across among operational people, scholars, and elected representatives for testing and experimentation. Operations personnel, agencies and jurisdictions contribute experiential material and practical applications. Academicians assess and analyze information, and government officials formulate policies and implement decisions. All stakeholders contribute to the data set, it is metabolized at all levels to experiment with what does and does not work, and the cycle goes through repeated iterations. And like a brain, any "damage" that occurs to the university can be overcome by the other constituent elements reorganizing in to meet the challenge. All participants are equally respected and trusted—everyone has something to contribute, even if it is how *not* perform a particular function. Within the homeland security enterprise space has to be created and money budgeted for creative and imaginative approaches. The enterprise cannot be run by just technocrats, and it must be able to identify and minimize practical impossibilities. A praxis must be attained that is inclusive of all stakeholders—the homeland security university itself needs to be resilient with respect to how it can adapt. John F. Schmitt in his *A Systemic Concept for Operational Design* holds:

> To the extent that we face socially complex, wicked problems, we should design before we plan and execute. Design is essentially the process of rationally formulating the problem to be solved out of the mess that confronts us, and doing it in such a way that the logic for solving the

problem emerges intuitively. We design by holding a conversational discourse among stakeholders during which an image of the problem and the solution emerges gradually through the collective intelligence of the group subjected to critical argument. During operational design, we think systemically—we imagine the problem as a system driven primarily by its own purpose, structure and processes, but also influenced by the broader environment within which it exists. We do this by developing, testing and modifying conceptual models hypothesized to explain the workings of the system in its environment. Because we cannot observe the physical causality that underlies the situation, we test our hypothesis heuristically through action. We observe the results of our action to see if they conform to the expectations of our design, and we redesign accordingly. In this way, design provides the basis for assessment and for adapting our operations to the situation through learning.[304]

Such a design would move away from traditional and hierarchical arrangements to have the various homeland security university components independently test different approaches and ideas. With 87,000 different jurisdictions in the United States,[305] the homeland security enterprise becomes a laboratory with 87,000 different experiments.

a. *Challenges for the University Metaphor*

Sagarin points out that hypotheses are often tested during conflicts and professionals and experts may never accept something that they previously either rejected or they failed to reject. According to Sagarin in his article, "A Holistic View of Homeland Security," "...If we are to take on the role of developing new security hypotheses then testing and modifying them the first step (as it is in any scientific study) is to consider the range of alternatives that are possible."[306] Even though there is a tremendous volume of skills, experiences, and education involved, many of the individuals and entities currently enrolled in the homeland security enterprise are still fettered by the machine metaphor. Their parent agencies and jurisdictions have been structured and have operated along mechanistic lines long before 9/11. And there has not been enough time to move to the independent mindset that would be needed to make stakeholders comfortable in the university metaphor. The freedom to make mistakes, draw incorrect conclusions and admit errors without severe repercussions does not yet exist in many elements of the enterprise. Furthermore, even though a university of operations as a learning brain-like entity sounds appealing, in many homeland security

settings, operational control must be paramount. For instance, the mitigation of emergencies often requires strict command and control of the response effort. The immediate response to a terrorist attack must still have clear lines authority in order to execute functions and achieve the greatest good for the greatest number.

Another difficulty in the university is that all stakeholders are not typically considered as equals. The organizational identity of many individuals precludes an equivalency of importance. This since of equality is necessary for true loyalty to the university of operations, and it is vital to the homeland security enterprise becoming as efficient in fulfilling its mission as possible. While organizationally selfish or arrogant behavior may not have the same lethal consequences as in the genus metaphor, it can still impede the acquisition of knowledge and hamper greater comprehension.

In the genus and university metaphors, specialists should be striving for more general knowledge about the overall enterprise. They would function as polymaths and should seek to know a little bit about a wide variety of homeland security subjects. However, even though the organism and brain metaphors presented in Chapter IV or their alternative applications of the genus and university metaphors touch on the overarching aspects of a homeland security culture, it may be that they simply cannot overcome the organizational entrenchment in the machine metaphor. If this is the case, then a metaphor that embraces the machine metaphor, instills a sense of an encompassing culture, and allows for the flexibility needed to ensure success of the homeland security enterprise must be put forth.

C.   AN ALTERNATIVE METAPHOR

If attempted, the different applications of the living organism metaphor to the genus metaphor and the brain metaphor to the university of operations metaphor may prove insufficient to supplant the machine metaphor. Therefore, the adoption of a metaphor that supplements and/or that incorporates the machine metaphor might be a more realistic alternative, at least in the short term or as an intermediate measure, to complete replacement of the mechanistic, bureaucratic approach.

### 1.	The Lego Metaphor

When considering Legos as a homeland security metaphor, it is important to distinguish a Lego kit from the big box of an assorted jumble of pieces. A kit has instructions for completion and a desired outcome pictured on the outside of the box and would be more akin to a mechanistic metaphor. Instead, the focus of the Lego metaphor is on the big box of pieces. The material with which the homeland security enterprise can work that is comprised of universal components with similar features that can be combined into an infinite number of arrangements. This translates into creative play versus just building a model kit. In the Lego analogy, the amorphous boundaries in the functional/jurisdictional areas are not important. Borders that matter are the physical limits and attributes of each Lego piece—each piece being a stakeholder in the enterprise. Additionally, the Lego metaphor is easy to visualize, tying it into the predilection for imagery metaphors discovered in the document analysis.

Despite the various lengths, colors, widths, and shapes (that represent the diversity of agencies, jurisdictions, and functions of the stakeholders) it is the means by which they fasten to one another that is the same. The small studs on top and the sockets underneath is their nature, and it is this connective capacity that makes Legos as a whole entity distinct. These studs and sockets represent the human, systemic, and organizational interactions that, if universalized and adopted, can make the homeland security enterprise work. Whatever machine metaphor exists for the organization of each piece can remain intact since there is no challenge to the organizational hegemony of the piece itself. The desires and abilities of each entity represented by a piece are still subject to the internal controls of that specific piece.

It is the connections between the pieces; the studs and sockets that represent the language used in the homeland security enterprise. It is this language/connection that can lead to the construction of an overarching culture. As individuals experience phenomena, those experiences are sedimented in their consciousnesses and individuals who share an experience jointly may develop strong interpersonal bonds. But language provides for an objective access to these same phenomena and experiences and anyone can learn from

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and become a part of them. Once the experience is objectivated in the language, it becomes part of a larger body of knowledge and teachable to those far removed from the original event(s).[307]

The elegance of Legoes is that multiple forms can be constructed - each structure built is designed for the unique requirements of a given situation. The ultimate form and function of the homeland security enterprise is dependent upon and specific to the goals to be accomplished at a particular time and in specific contexts. As many and as varied a number of pieces can be brought to bear in the pursuit of objectives. In this way of thinking, homeland security encompasses everything, or at least anything one wants it to be. Furthermore, various pieces can be combined to perform vastly different forms and in the absence of certain pieces, others can be substituted to accomplish the same goal. Structures can be built with dissimilar units or units that are uniform in all aspects. Moreover, the structures can be disassembled when they are no longer needed, freeing pieces for other projects. As it is in Legos, so it is in homeland security: to build a variety of structures and perform a myriad of functions and, a differentiation of pieces in necessary but these pieces do not have to be interchangeable. It is the language, the connections themselves must be interchangeable.

The whole metaphor might presuppose that there are builders (directors or managers), with purposes in mind for the homeland security enterprise. But if all homeland security events start as local events, then the relevant Lego pieces will move of their own accord toward it along lines appropriate to their purpose, rotate and orient themselves so that they can lock together in the most efficient form(s). At least in the initial stages, such actions would be accomplished independent of a builder.

By defining the homeland security enterprise as a flexible arrangement, with metaphoric language and common culture acting as connecters and fasteners, it can take any form that it needs to in order to adapt to the specific circumstances of a given situation. Homeland security is as big or as small as it needs to be. Once again, it is not the arrangement that is the culture, such as the other metaphors explored, but it is the language and the ability to connect to other pieces that is the culture. The homeland

security enterprise sense of *self* lies in the self-awareness of the individual pieces, how they fit together in common cause, and how it can do what is needed. Figure 13 depicts the familiar universal "fit" of Lego pieces.
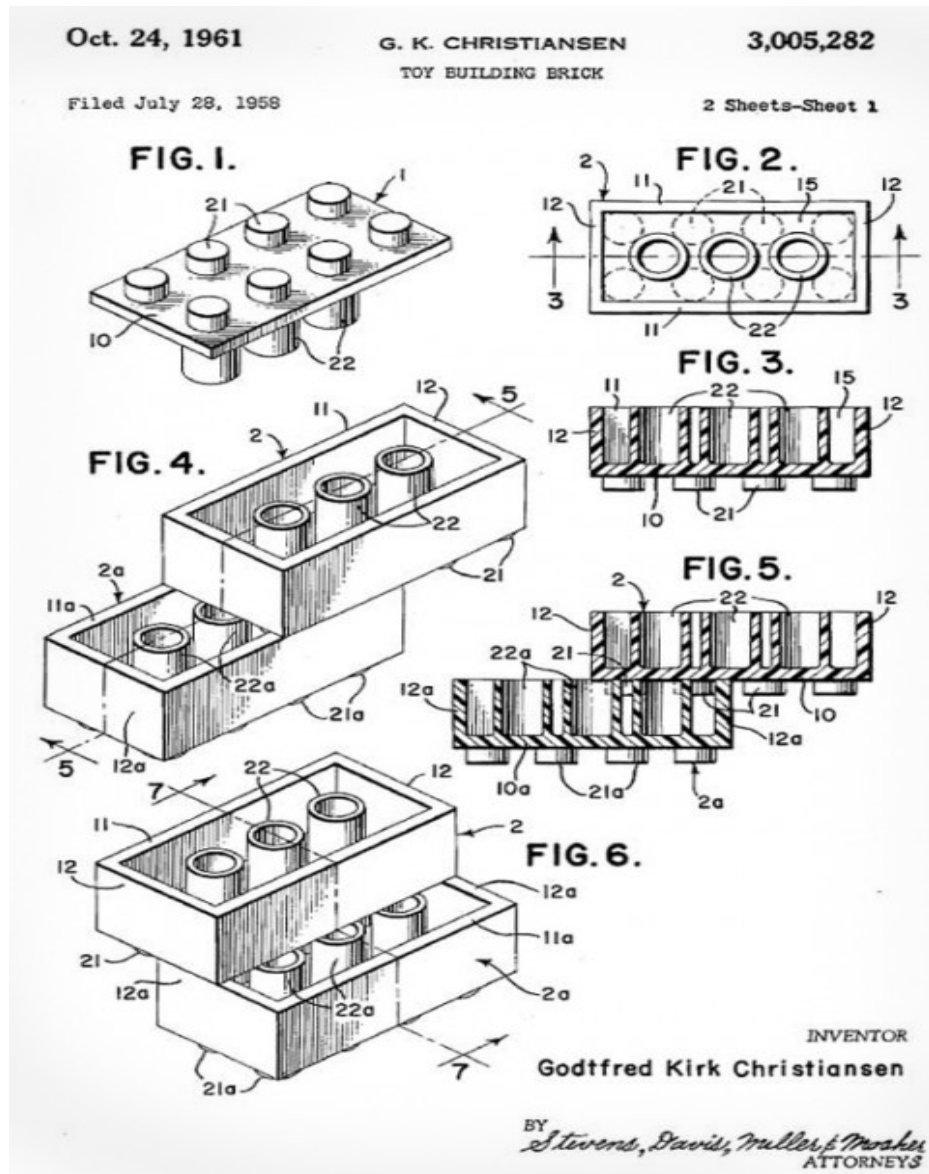

Figure 13.   The Lego Patent[308]

a.   *Challenges for the Lego Metaphor*

A potential barrier to the application of this metaphor may be that it does not adequately displace, incorporate, or augment the machine metaphor. The focus on

structures and functions still has an operational aspect that demands stated purposes and hence mechanistic approaches. Competing priorities and perspectives may skew the form of the structure being created.

For the Lego metaphor to work there must be more emphasis on the non-operational, non-emergency, non-immediate facets. As with the university metaphor, professional space must be created for what is essentially play. The incentive for stakeholder pieces to "join the rest of the box" is in their ability to adjust to the new paradigm by playing along with others in all homeland security endeavors. The regard in which each homeland security piece is held by the other pieces is proportional to how well it can connect to its counterparts. Pieces that connect and function well will be used whenever feasible and ultimately, pieces that do not connect well will be avoided when possible. In essence, it does not matter if pieces are very good at what they do; it is how they can function in relation to other pieces that truly matters.

Currently though, the pieces still more or less function together, at least in operational settings. Given that homeland security enterprise components already have distinct identities, forged in part by their professional languages, it may be impossible to get them to abandon jargon, nomenclature, abbreviations, and acronyms that add to that distinction. If the connecting studs and sockets are too few in number, that is, if the language is not universal, then pieces can be put together so tenuously that they have no strength and can separate under stress. The overarching homeland security culture is not ingrained. A foreshadowing of the adoption of a uniform language, at least in an operational setting, might have begun with the institutionalization of National Incident Management System. But as was presented earlier, the language adopted is strikingly similar to the terms in classical management theory and is therefore non-innovative machine-speak.

D.   OMNICULTURALISM

Whatever metaphor is employed, each of the above alternative applications or metaphors looks to the common theme of maintaining independence of entities while developing media in which they can function with the best results. Barriers to

establishing such a homeland security cultural connection include the unique the social identity biases of homeland security constituent organizations. The concept of omniculturalism, while primarily concerned with ethnographic issues, might be extrapolated and applied to the intergroup dynamics of homeland security entities. The objective of omniculturalism, as outlined by Moghaddam and Breckinridge in their research on multiculturalism, assimilation, and omniculturalism vis-à-vis homeland security, is "…to establish a solid basis of commonality between people with the framework of a primary identity, before adding an emphasis on how people also belong to groups that in some respects differ from one another."[309] Those contextual impediments to the establishment of a homeland security culture in which stakeholders operate are born of individuals' own experiences and interpretations and organizational cultural norms. The goal is to have agencies embrace the notion that, whatever specialized function an organization performs, it still considers itself part of a larger cultural whole. This is because, "…omniculturalism presents opportunities for groups to both find common ground in shared human characteristics and establish their own special (and perhaps unique) characteristics at a secondary level."[310]

If what is needed is the development of a synergistic response network—an interconnected cohesive fabric possible only through thorough familiarity with the capabilities and limitations of each component of the network and a willingness to overcome organizational biases to ensure a free flow of information to all members,[311] then a homeland security omniculturalist approach necessitates the adoption of a common professional language and culture. Kuhn states, "Scientific knowledge, like language, is intrinsically the common property of a group or else nothing at all. To understand it we shall need to know the special characteristics of the groups that create and use it."[312]

In effect, the homeland security enterprise must first think, talk, share, experiment, discover, learn, and understand. It then must use the information it has produced, developing the most effective responses to emergencies and other calls to action. This process is unceasingly repeated. And this must be accomplished while honoring the individual's and entities' independence and perspectives.

Many persons working in the homeland security enterprise, especially in emergency-oriented services, do so for reasons more altruistic than making money. Instead, the satisfaction they derive from their work is more than financial compensation; there is a sense of sacrifice and a calling to a higher good, in line with the three characteristics of the traditional learned professions outlined in Chapter I.[313] Additionally, Don L. Kooken, and Loren D. Ayres, in their article, "Police Unions and Public Safety," assert:

> …professional organizations are composed of persons who are engaged in rendering a public service, a service that demands specialized performance and one that is unlimited by compensatory or financial evaluation. The objectives of professional service may seem less tangible…and professional ideals transcend all individual financial and social benefits.[314]

In My Job, Myself: Work and the Creation of the Modern Individual, Al Gini writes:

> We both establish and recognize ourselves in our work. Work allows us to find out what we can do and what we cannot do, how we are seen by others and how we see ourselves. In work we discover our boundaries and limits as well as our capacities for success. Work is the yardstick by which we measure ourselves against others. It is the means by which we establish our rank, role, and function within the community.[315]

There is, perchance, a lesson here for the homeland security enterprise in developing its own "personal" vision as well. But the larger question still remains: how does the homeland security enterprise make that transition from its current machine metaphor status to a metaphor state that can carry out the reiterative process?

E.   PAN-SPECIALIZATION

As ambitious as it sounds, the implementation of a non-machine metaphor—focused approach to conceptualizing and defining homeland security must include the creation of an overarching mindset, culture, and philosophy that commands loyalty among all homeland security practitioners. The parochial outlooks of various organizational cultures must give way to an all-encompassing ethos of homeland security so that, although functions and requirements may differ, each of the players is genuinely and equally valued for the parts they play. Here, this thesis introduces the concept of

"pan-specialization." Similar to omniculturalism, pan-specialization is a movement focusing primarily on the personal aspects of the homeland security enterprise through the increased appreciation that will emerge when all players see the benefit of recognizing how their individual roles and functions fit into the endeavor and how their actions can complement or counter-act the efforts of other individuals. The accent is on the persons within organizations and not the organizations themselves. For example, how the intelligence community considers its actions impacting law enforcement operations may not carry as much weight as a particular intelligence analyst understanding how his/her actions will affect the individual police officer whom he or she knows personally.

Pan-specialization may be achieved through a four part process: exposure, narrative, trust building and metaphor making.

1.   Exposure

Exposure is as straightforward as getting personnel from different homeland security enterprise entities together in small groups to share "sea stories," discover the similarities among their experiences, and to develop an appreciation for others' challenges and methods, not from organizational standpoints but from the perspective of the individuals involved. The amount of time that various players spend together must be vastly increased and on a wide and deep scale—not for education and training *per se* but simply to get to know one another. Time is needed that is not structured as drills and exercises, but for cooperative activities for organizations' individual members to foster appreciation for the challenges, needs, and functions of the others. At least initially, there should be no pre-ordained agenda and the emphasis is to allow people to talk and ask questions in a non-threatening atmosphere. By allowing for exposure time, especially for personnel at lower echelons, a homeland security camaraderie and *esprit de corps* can be built. Exposure suggests that individuals and agencies do not have all of the answers and that that they are open to learning.

The most likely barrier to overcome, though, is one of communication. In order to maintain a sense of uniqueness, many organizations have developed their own jargon, abbreviations, and acronyms—in effect their own languages. The use of these languages

must be abandoned in favor of a more common phraseology. Reducing reliance on organization specific terminology not only makes interagency communication easier, it also reduces the "us versus them" thinking and jurisdictional and operational territoriality.

a.   *Language*

As the *line* example in Chapter III shows, even simple differences in common languages are problematic. The specialized terminologies of constituent homeland security disciplines serve only to exacerbate problems especially when considering acronyms and abbreviations. Curiously, this tendency toward reductionist language is similar to the literalist school of distilling language down to its most basic elements and it is repeated in the popular culture as well: the shortening of celebrity names (e.g., "J-Lo" for Jennifer Lopez) and the abbreviations used in text messages and tweets. Nonetheless, in the homeland security realm, where communication confusion can have drastic consequences, such reductionism is counterproductive. For instance, there are six different definitions for the letters "SAR" in the *Federal Emergency Management Agency Acronyms, Abbreviations, and Terms* book.[316]   While such linguistic shorthand is useful inside an organization, it is awkward at best when communicating with outsiders. Some natural words such as *line* will always have multiple meanings, depending on the context in which they are used. Even though the concept of abridging words to keep communications brief may have some merit, such reductionism is pointless if it is compromised by the presence of multiple meanings of manufactured words, abbreviations and acronyms.

Here the literalist/mathematical school has an advantage. For instance, the symbols *Sigma* (Σ), *Pi* (π), and *Delta* (Δ) mean "the sum of," "3.1416," and "change," respectively and once these particular conventions were chosen, they have only one definition apiece, intended to precisely convey meaning in all contexts. In contrast, the Federal Emergency Management Agency's Acronyms, Abbreviations, and Terms (itself ironically referred to as the *F.A.A.T.* book), has over five thousand entries, many of which have multiple definitions or meanings (e.g., 120 terms have four or more meanings and

one term, "CAP," even has 12[317]). Clearly, the use of acronyms and abbreviations is approaching absurd proportions. One must ask what purpose is served by using "PD" for "paid," and "DR" for door(s). Is it so much harder to just say "search and rescue" than "SAR" or verbalize "post office" instead of "PO?" Such linguistic practices do not reduce, objectify, trim, or make the language easier to use and the abbreviation /acronym conventions serve to obscure and separate. In the broader sense, they do not elucidate and clarify.

While it might be considered quixotic to push for homeland security stakeholders to adopt clearer language and plain speaking, perhaps a long-term goal of later exposure meetings might task groups to simplify the abbreviations and acronyms, identify other contextual communication impediments and achieve consensus on a professional language.

2.   Narrative

This power of a narrative approach has been advanced by Theodore Sarbin in, *Narrative Psychology: The Storied Nature of Human Conduct*, proposes, "The narrative is a way of organizing episodes, actions, and accounts of actions; it is an achievement that brings together mundane facts and fantastic creations; time and place are incorporated."[318] This is echoed by Innes and Booher in *Planning with Complexity* in which they hold:

> Drama and engagement are important in dialogue to move and change the players. Emotions run high in creative dialogue on contentious issues, not necessarily through confrontation, but through participants' stories and anecdotes, even though many are hypothetical ones about what would happen if…[319]

Through such unstructured interactions players will not only become aware that fellow actors have their biases and positions but they will also become cognizant of their own before making normative or prescriptive statements. Innes and Booher also look to the self-organizing component of complex adaptive systems and propose the collaborative relationships often outlast the initial problem solving impetus.[320]

Sarbin's "narratory principle" holds that:

> Human beings think, perceive, imagine, and make moral choices according to narrative structures. Present two or three pictures, or descriptive phrases, to a person and he or she will connect them to form a story, an account that relates the pictures or the meanings of the phrases in some patterned way.[321]

The narrative allows for the inclusion of actors' reasons for their acts, as well as the causes of happening.[322]

In their essay, *Narrative Thinking as a Heuristic Process*, John A. Robinson, and Linda Hawpe see that the creation of the story depends, at least partially, upon who is telling the story.[323] The perspectives of storytellers influence the product and make it personal and therefore more useful in everyday life. The values, feelings, objectives, needs, and fears of individual storytellers may render different versions of the same event and listeners can take from the story what is appropriate. Additionally, since different people tell and hear, the same story can be used to instruct in various contexts as unique points of the story can be applied in several sets of circumstances.[324]

The personal narrative departs from the literalist tradition of prescriptive and clinical approaches because stories are flexible and open to interpretation as compared to the rigid principles and laws of science. In science, similarities among phenomena are defined by strict criteria and the more pliable resemblances that narratives can evoke are not permitted.[325] Robinson and Hawpe claim:

> Perhaps the most radical difference between scientific and narrative thinking is in cast of mind: the scientist tries to eliminate ambiguity and uncertainty and is uncomfortable when there are two equally credible theoretical accounts of some phenomenon. In contrast, in our everyday reasoning about social reality we live comfortably with apparent contradictions. We want explanations which are convincing enough to be accepted as true, but recognize there could be alternative accounts which tell a different but equally persuasive story.[326]

Story is a way of establishing faith, and listeners can be inspired by a meaningful story.[327] Even so, the listener will ask "Who are you and why are you here?" Until these questions are answered, listeners will be wary of the storyteller[328] and trust in the

storyteller will allow their message to be successfully conveyed.[329]   In trust building, objective data does not provide the same engendering quality as the judgment and subjective experience of the narrator.[330]

3.   Trust Building

Trust is an intangible asset and with it comes cooperation and commitment; people in a strong trust environment are often ready to set aside personal self-interest for the greater goal. Trusted and trusting people have a heightened assurance in one another's purposes and actions.[331]   As people face changes and are asked to move out of their comfort zones, they become more guarded and ask, "What are the true reasons underlying this change?"[332]   When collaboration is being advanced, the would-be participants are looking for clues and signals indicating that others are trustworthy and that the collaboration has strong chance of success.[333]   A culture of trust and commitment will motivate people to do what is necessary, of their own accord and beyond what is simply required; their minds and hearts will be in line with the new strategy.[334] Therefore, it is important to realize that the less input people have in strategy development, especially when they are "lower" in the hierarchy, resentment can build if they believe that something new has been pushed at them with little regard for their thoughts and feelings.[335]   In *Blue Ocean Strategy*, W. Chan Kim and Renee Mauborgne discuss people's need for emotional and intellectual recognition:

> Emotionally, people seek recognition of their value, not as 'labor,' 'personnel,' or 'human resources' but as human beings who are treated with full respect and dignity and appreciated for their individual worth regardless of hierarchical level. Intellectually, individuals seek recognition that their ideas are sought after and given thoughtful reflection, and that others think enough of their intelligence to explain their thinking to them.[299]…When individuals feel recognized for their intellectual worth, they are willing to share their knowledge; in fact, they feel inspired to impress and confirm the expectation of the intellectual value, suggesting active ideas and knowledge sharing. Similarly, when individuals are treated with emotional recognition, they emotionally tied to the strategy and inspired to give their all.[337]

Peter Block, in his book, *The Empowered Manager: Positive Political Skills at Work*, says, "the task is to walk the tightrope between being strong advocate for our

beliefs and not terminally alienating others in the process."[338]   He states that in building

trust, entities must be aware of their current positions vis-à-vis their potential partners.[339]

The dimensions of trust and agreement produce a matrix with five different starting

points for trust and agreement:

- High trust/high agreement exists among allies

- Low trust/high agreement exists among bedfellows

- High trust/low agreement exists among opponents

- Low trust/low agreement exists among adversaries

- Fence sitters exist in low trust/mid agreement between bedfellows and adversaries[340] (see Figure 14)

Block notes that while the behavior strategies and priorities in each relationship

vary, the objectives of the interactions with each type are essentially the same:

- Exchange visions, purposes and goals

- Affirm or negotiate agreement

- Affirm or negotiate trust[341]

Trust and Agreement
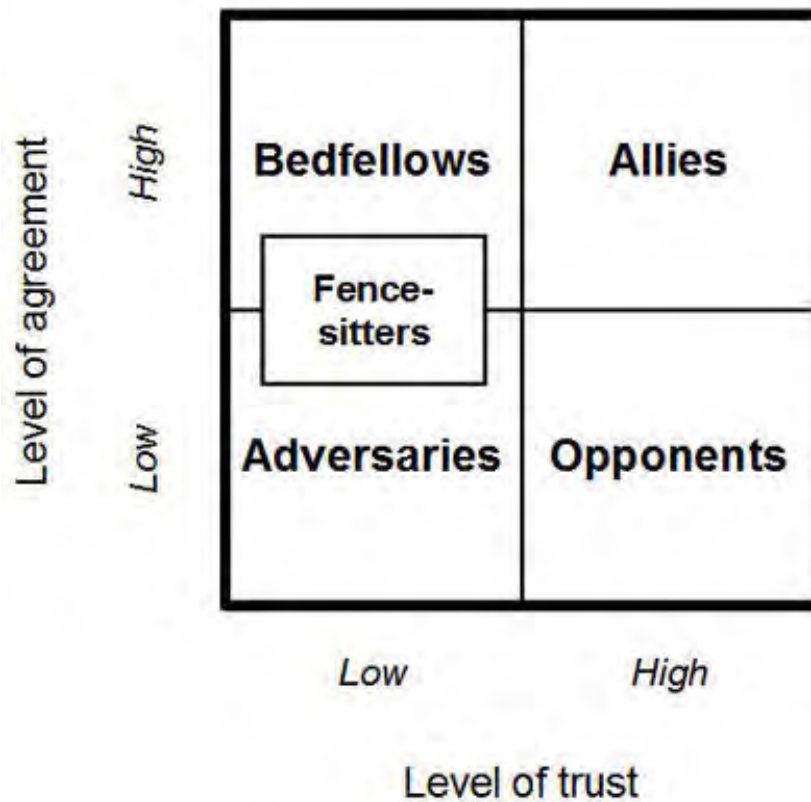
Figure 14.   Trust/Agreement Matrix[342]

a.   Allies

1.   Affirm agreement on the project or the vision
2.   Reaffirm the quality of the relationship
3.   Acknowledge doubts/vulnerabilities regarding the vision or projects
4.   Ask for advice and support[343]

b.   Bedfellows

1.   Reaffirm the agreement
2.   Acknowledge that caution exists
3.   Be clear about what is desired from working together—Ask bedfellows to do the same
4.   Try to come to agreement on how to work together[344]

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c.   Opponents

1.   Reaffirm the quality of the relationship—ensure that it is based on trust

2.   State the position

3.   State in neutral manner ideas of what their position is

4.   Engage in some form of problem solving[345]

d.   Adversaries

1.   State vision for the project

2.   State in a neutral manner the best understanding of the adversary's position

3.   Identify/admit to contributions made to the problem

4.   Strive for plans but with no demands[346]

e.   Fence Sitters

1.   State the position

2.   Ask for the positions of the fence sitter

3.   Apply gentle pressure

4.   Encourage them to think about the issue and their requirements for their support[347]

When reaching across organizational boundaries, trust is essential. Potential partners, especially outside partners, can be very cautious due in part to their unique organizational cultures.[348] Block states, "Argument or conflict can take place frequently over project purpose, goals, and requirements. Trust is almost universally built or destroyed on the basis of issues of justice and integrity."[349] Trust can never be taken for granted and the honesty that exists among entities needs constant reaffirmation.[350]

4.   Metaphor Making

In the commercial realm many companies have developed their own unique mission and vision statements, but few have created a corporate metaphor. James Lawley, and Penny Tompkins, cite in their work, *Metaphors in Mind: Transformation through Symbolic Modelling*, the example of a niche software development company, New Information Paradigms, which had staff members combine into teams to develop metaphors for their group by combining team members' individual metaphors.[351] These

group metaphors were then combined into a single corporate amalgam metaphor. During the process, the staff discovered areas of incongruity, redundancy, and synergy, winding up with an improved understanding of what they were collectively trying to achieve and how they could work together to achieve it. The people at New Information Paradigms found that presenting concepts and situations as metaphors provided opportunities for receivers to comprehend the messages expressed to them in their own terms. The metaphors revealed the reasons underlying why things were the way they were and they conveyed massive amounts of information and richness. In essence, the staff members learned that metaphors allowed for a "common definition language."[352]

Theodore Sarbin also points out that metaphors are particularly useful in such narratives because:

> To create and use root metaphors is a special case of metaphor making, a common achievement of human beings. When a person confronts a novel occurrence for which no ready-made category or class is available, the occurrence remains un-instantiated, unclassified, or unassimilated until a class or category is located or invented. The recognition of partial similarity on some dimension or construct provides the basis for analogy, and if linguistic translation is necessary, the partial similarity is expressed as metaphor. The novel occurrence is named with the metaphor.[353]

Innes and Booher look at "collaborative rationality" as a means for solving problems without seeking "best" solutions but a way for all players to improve their positions.[354] However, their approach presupposes the existence of some problem or set of problems to be solved by the interaction of the participants and they admit that including all stakeholders is not practical.[355] But the creation of a homeland security culture and philosophy depends upon including as many parties as possible. To inculcate all members, the implementation plan must be far-reaching and deep: no individual is too junior; no organization is inconsequential; no jurisdiction is too remote; no agency too small. The "problem" to be solved can best be framed as an assignment: "What metaphor(s) would best serve the homeland security enterprise?"

F.   IMPLEMENTATION

1.   Requirements

Essentially, all agencies, jurisdictions, and organizations need to do to engage in pan-specialization is to set up meetings with one another's' members. However, given the massive scope of such a movement, with over 87,000 jurisdictions in the United States, this thesis suggests the following guidance be provided to stakeholders in order to maximize the effectiveness of the program.

When setting up meetings among stakeholders, attention should be paid to developing lateral relationships first. While cross-familiarization must take place at all levels, care must be taken to avoid situations where rank, seniority, or position might inhibit the free flow of conversation. However, agency and jurisdictional leaders must participate at their respective levels as well.

Initially, look for neutral ground to have the gatherings, e.g., restaurants, outdoor settings, conference rooms. Once rudimentary relationships have formed, various stakeholders can host meetings.

The assemblies should be small: research optimal sizes of groups and let the same members meet several times in a row to develop rapport and then start branching out. Use members of one group to introduce new groups and members to one another in order to frequently change the composition of the groups.

Set a regular schedule of meetings: space them to allow time to "digest" the content of the meetings but not so much time as to let burgeoning relationships wither. Additionally, allow enough time in meetings for them to be effective.

While pan-specialization is designed for incumbent members of agencies and jurisdictions, it should also be incorporated during the initial training of new members. This may be accomplished through the introduction of homeland security coursework into recruit academy classes and agency orientation sessions.

Over time and as relationships solidify; specific problem sets can be introduced. It is paramount, though, that leaders be willing to adopt or incorporate solutions generated. Above all, maintain a commitment to the program in the face of conflicts and resistance. The process is long-term in nature.

In the event that monies are not forthwith, perhaps a burgeoning pan-specialization program might rely on volunteerism, at least initially, to build momentum and a positive track record.

2. Metrics

The number of personnel involved and the amount of time that they spend together are the only parameters that need to be measured. Naturally, the yardsticks by which each entity is measured will not be the same but it must be accepted that those yardsticks are fair and relevant to the respective parties. Fortunately, there is no need to address the effectiveness of operational outcomes, at least initially. Measuring the product of pan-specialization, though, will be difficult since individual attitudes toward others and other agencies can fluctuate widely. Perhaps a series of surveys covering topics such as the importance each individual attaches to the various other homeland security stakeholders and their functions could be conducted prior to and during the implementation at regular intervals. Comparisons could then be made among the survey results to note trends, areas of success and of failure and the overall efficacy of the program. Of course, the larger issue is that the implementation will be continuous— ideally there should be no end to it—therefore, the surveys should be continuous as well. Like evolution, the creation and continuance of a homeland security culture has no definitive endpoint but once established, maintaining the culture will be the same as maintaining any organizational culture, with the understanding that "maintaining" in this sense means fostering and encouraging the flexible and evolvable nature of the homeland security culture.

> Other measures might include how much broad based homeland security education and training is offered to new and incumbent members of an entity. Funding and grants could be tied to the quantity and quality (e.g., courses must be conducted by educated and trained personnel such as

graduates from accredited homeland security educational programs). This would have the added effect of increasing the demand for such programs and encouraging agencies and jurisdictions to send their people to institutions of higher learning.

3.   Leadership

The role of leaders will be twofold: higher echelon leaders must to sell the concept to those who finance it and persuade homeland security component first line supervisors of the value of pan-specialization. The first line supervisors, as leaders of small units, must organize the inter-entity meetings and encourage rank and file members to genuinely accept the need for them. Leaders can bolster the probability of success if they take steps to ensure that the environment is inclusive and the participants view the program as crucial to future growth and prosperity. In such an atmosphere when setbacks do occur, as they inevitably will, people will be more inclined to find necessary solutions.[356]

Currently, the focus of collaborative relationships is in the leadership cadres of various organizations. Exercises are designed for top officials and the lessons from said exercises are disseminated throughout the organization and membership (with vastly differing degrees of efficacy). The limitations of this approach are that exercises address interoperability and cooperation issues that are geared to specific problems and do not address the fundamental underlying need for incorporating stakeholders in a common culture. The vagueness and ambiguity of pan-specialization goals may limit genuine enthusiasm for the program. Also, as Clayton M. Christensen states in his *The Innovator's Dilemma*:

> [the] difficulty is compounded immeasurably when a project is embedded in an organization in which most people are continually questioning why the project is being done at all. Projects make sense to people if they address the needs of important customers; if they positively impact the organization's needs for profit and growth, and if participating in the project enhances the career opportunities of talented employees. When a project doesn't have these characteristics, its manager spends much time and energy justifying why it merits resources and cannot manage the project as effectively. Frequently, in such circumstances, the best people

do not want to be associated with the project—and when things get tight, projects viewed as nonessential are the first to be cancelled or postponed.[357]

When applied to the homeland security enterprise, the needs of customers equals the needs of citizens, the organization's profits are similar to the ability of the enterprise to fulfill its mission, and the career enhancement of talented people translates into a well-rounded homeland security professional. In many ways, leaders will be placed in a position to teach. They will need to take the time to make pan-specialization not only understandable to their students (personnel and agencies), but to also develop methods for proving its worth, instilling its values, and working towards a homeland security ethos.

4.   Resistance

Challenges to pan-specialization may come from several quarters, primarily by those who do not understand the ultimate objective or by those who question the value of it. These parties include: taxpayers, agency heads, elected representatives, individual organizations and their members, etc. The most likely roots of resistance from agencies/jurisdictions, organizations, and their members will be the result of seeing the movement as threatening (fear of the unknown/uncertainty), as a loss (having to surrender something comfortable for something new), as more work (more is demanded from individuals), a lack of confidence (the program is beyond their abilities), and as a diminishment of position (the status of individuals and their organization is questioned).[358]

Furthermore, some organizations such as emergency service providers and the military have strong traditions that often work to thwart change, no matter how logical or beneficial. Those organizations and individuals with the bureaucratic mindset of seeing the world as an ordered zero-sum game will also pose a challenge simply because the new program is untried. In many minds, it may be that the machine metaphor is seen as working sufficiently. Therefore, "if it isn't broke, don't fix it."

Organizations and individuals who seek positions of primacy or power will represent the greatest challenge to efficient implementation of pan-specialization. While most professionals would not admit to the more emotional reactions listed above[359] there are those who would seek to undermine the process where personal or professional agendas are at stake. Perhaps others might merely pay the program lip service in order to maneuver into better positions vis-à-vis other stakeholders, seeking to exploit the vulnerabilities inevitably revealed by other players

Overcoming resistance involves being mindful of the prevailing politics; incremental and deliberate implementation; identifying individuals across the homeland security enterprise spectrum who embrace the idea and documenting progress.[360] In any event, dogged persistence in achieving the alternative metaphor goal of a homeland security culture will be vital to surmounting resistance wherever it may arise.

5.   Risks

The risks associated with this plan are that it may not work fast enough to have a meaningful impact on the homeland security enterprise. The challenges that defeated the NASA and Three Mile Island engineers and the Neanderthals can also swamp pan-specialization. That is, if problems are not accurately identified along the way and if the movement is not adopted on a large enough scale and with adequate speed, then it may not reach a "critical mass" by which it can broadly change organizational thinking from "us and them" to the "we and ours" attitudes necessary to a healthy and collaborative homeland security culture. If pan-specialization is not sincerely embraced by the participants, it may have a boomerang effect providing just information about the other players to create a "familiarity breeds contempt" atmosphere rather than genuine understanding of the needs and goals of others.

6.   Costs

On the face of it, not having set agendas or outcomes might make pan-specialization a hard sell to funding entities. The question of "what are we getting for our money?" will not be easily answered in the short-term. Therefore, as funding becomes tighter across the board for homeland security stakeholders, it is important that monies

are disbursed according to recipients' willingness to embrace this new approach. Determining costs will depend upon how enthusiastically each stakeholder embraces the program. For instance, the ideal pan-specialization meeting would take place so that individuals would not be subject to duty other that the get-together. For example, police officers and firefighters on watch may have their gatherings interrupted to respond to emergencies. Therefore, monies for overtime or extra pay would be required.

But since many of the homeland security enterprise components are government or government associated entities, the proponents of the "run government more like a business" may not see the value in the program. Therefore, selling the pan-specialization movement will have to make the argument that there is a disconnection between running government "more like a business" and understanding that, given the various metaphors commercial enterprises have adopted, business is not what it used to be. In essence, government *is* being run like a business but like a business from a bygone age—one whose model is anachronistic in the modern marketplace.

G. MORE THAN ONE METAPHOR

This thesis has posited that, in addition to the machine metaphors already in use, at least one other metaphor is required in comprehending the homeland security enterprise. The research conducted indicates that the literalist/machine metaphor still appears to dominate enterprise thinking. The literalist/machine looks to reduce all to the essential elements—language, money, operations—all must be efficient with no waste or redundancy. The building blocks of a phenomenon are all that matter. In contrast, the contextual/network looks to use the building blocks. Whether they are Legos or the carbon, hydrogen, oxygen, nitrogen atoms necessary for all life, they serve no purpose if they are not utilized. In the context/network metaphor waste equals surge capacity and redundancy becomes resiliency. The contextual/network models represented by the biological/university/Lego oriented metaphors can provide a better vehicle for conceptualizing, defining and representing the homeland security enterprise.

The value of having homeland security professionals just getting together to share their experiences may seem obvious. But given the tenor of documents stating that

increased cooperation and collaboration are important objectives, a "not seeing the forest for the trees" situation has arisen. Properly established and nurtured individual relationships will help with the evolution of lasting organizational relationships—the backbone of cooperative efforts. Over time, these relationships will constitute a homeland security culture, philosophy and history that have been built from the ground up.

Jargon and technical terms do their part to reinforce in-group thinking and identity. It is a primary threshold for determining if a person is one of "us" or one of "them." Impediments to good communication/connection/culture in the homeland security enterprise include the various contexts in which the stakeholders operate and individuals and organizations are hampered by their own experiences, interpretations, and biases. According to Joseph Pfeifer, who studied first responder organizational biases at the World Trade Center on 9/11, the biases exhibited by organizations is driven by "the desire to belong to an omnipotent group that is capable of excluding those who are not part of the group."[361] These biases are not set aside despite the exigencies of a crisis, as was unfortunately discovered during the attempts to evacuate the World Trade Center towers on 9/11.[362] An agency's natural disinclination to defer to other organizations is the product of the agency's implicit mindset of believing itself as being the most important. Firefighters and police officers, inculcated into organizational cultures that consider themselves important—and in terrorist incidents, of course, they all have critical roles to play, can have an overdeveloped sense of their being the "bravest" or "finest."[363]

The more abstract the habitualization and the more "legitimate" it is from an organization's perspective, the less likely the habitualization (such as, "we are the bravest and finest, not you guys") will be challenged when faced with immediate and demanding circumstances. Organizational habits may continue even after they are no longer pragmatic and therefore, an organization's members may no longer behave or perform because their custom is workable, but because it is "right."[364]

The homeland security practitioner must become a "pan-specialist" similar to the polymath/Renaissance person espoused by Manuel Lima.[365] Therefore, it may be beneficial to induce organizations to not concern themselves so much with what they are designed to do, that is, their machine—like specialization, but to have individual

professionals within those organizations gain independence from the machine metaphor and discover what they *can* do: their pan-specialization. Of course, this flies in the face of the Quadrennial Homeland Security Review's endorsement that, "To achieve unity of effort, partners will need clearly defined roles and responsibilities…"[366]

Edward Bell, in his research on higher education executive teamwork, uses the remarks of a Steelhead University administrator to summarize one of the key aspects of "real" teams:

> That all members of the group must possess the right attitude, a willingness to be a part of that kind of team. This way, they value one another as equal members of the team. In many ways, working closely as a team can be messier and more time consuming because participants are 'sort of all over each other.' No one is an island - just out there doing their own thing—everything that participants do is interconnected. Team members have to be willing to put up each other and it takes a lot of time and energy. Nobody needs another meeting in their day yet team membership requires more meetings. But the rewards can outweigh all of the inconveniences. Everybody must be willing to participate.[367]

Teamwork, Bell states:

> …like any tool, how it is utilized determines how effective it can be. The butt of a screwdriver can certainly be hammered against a screw in an attempt to drive the screw into wood. However, the screwdriver's point inserted into the end of the screw and turned will be much more effective.[368]

Metaphors offer the same opportunities for use and misuse. A potential metaphor of "the homeland security enterprise is as a bunch of blind Neanderthals groping at a nuclear powered, space-faring elephant," might have problems with the systematicity, grounding, coherence, and consistency necessary for a workable conceptualization and definition, but the creativity associated with metaphor use makes such conjectures possible, at least as part of a larger search process for the *right* metaphor(s). And this of course, is assuming that homeland security practitioners even recognize that what they have at their disposal is a tool. For those who see metaphors as mere linguistic embellishments, that is all they are or can be—nice but unnecessary.

It is hoped that this thesis will assist those who can best benefit from conceptualizing homeland security through the employment of metaphors become aware that metaphors have this power.

In closing and to take the screwdriver metaphor one step further, primate keepers say that if a screwdriver is provided to a chimpanzee, it will throw it at someone, and if it is given to a gorilla, the animal will scratch itself with it. But if a screwdriver is given to an orangutan, it will let itself out of its cage.[369] This is the status of metaphors: how they are perceived and who perceives them will determine how they are employed. If used by pan-specialists with the intention to conceptualize, define, and represent homeland security, new and alternative metaphors and alternative applications of existing metaphors can provide the tools required for letting the enterprise out of its cage.

> The intuitive mind is a sacred gift and the rational mind is a faithful servant. We have created a society that honors the servant and has forgotten the gift. We will not solve the problems of the world from the same level of thinking we were at when we created them. More than anything else, this new century demands new thinking: We must change our materially based analyses of the world around us to include broader, more multidimensional perspectives[370]

> Albert Einstein

APPENDIX. HOMELAND SECURITY HASH AS AN EXAMPLE OF THE SECOND STAGE RESEARCH

Given that this particular work has a metaphorical title, it seems appropriate for it to serve as an example for breaking out coded terms and the categories in which they were placed. These include a list of metaphors that have become so ubiquitous in homeland security writings that they were not coded in this study. For brevity's sake, variations of each term are to be assumed (e.g., the word "force" would only be listed once instead of listing all forms and tenses of "force:" "forced," "forcing," "forcible," "forces").

Coding of *Homeland Security Hash* terms

<u>Analogy</u>

accelerated	little angle
adaptability	plagued
addiction to	power matrix
alertness	price of failure too high
break in performance	promised
clash of cultures	set some agencies free
dealing	stunning
derive	success stories
earned	tension
endless	top of class
evolve	turf war
expensive dream	turmoil
facts of geography	uneven inventory
horror stories	win hearts and minds
hush-hush	zeitgeist

Imagery

aborted	disarray	pieces
absorb	drifted	pressing
agility	eclipsed	rollout strategy
alignment	face	sharply
antiquated	fall short	(to) shoulder
backlog	fulcrum to leverage	slip into
blend	gave (mediocre) grades	squabbling
born in a fever	glued	started out
came along	high visibility	struggle(s)
caulk borders	lagging	tighten
cobbled	launch	tinkering
color(s) in spectrum	looming	top-heavy
common ground	made the rounds	train wrecks
corners	moving at a crawl	tucked away
create a picture	on the table	turf
decaying	opened for business	turnover
deflect	opened its doors	wake of 9/11
detach	overlap	weighed-in

Metaphor

if destiny is largely determined by birth, this is a federal bureaucracy destined to stumble, and perhaps to fail.

turf wars...rage

pieces of...the collage were thrown in...not composed

budget was in shreds...cutbacks...stripped

"Virtual border" composed of drones, pole-mounted cameras, satellite monitors, and 700 miles of two-layered fence

reasonable rate of return on the billions...spent

give some agencies back to their original owners...perfectly comfortable...housed in...move home

Simile

it is as if a group of widget makers were brought together in a private-sector merger and told they must now start producing software

they can serve as the strategic brain trust of a department

Common Terms Not Coded

So many metaphorical words and phrases appeared so often in all documents researched, both the seminal and subsequent types, that they were considered common and consequently not coded. These "homeland security specific" metaphors have become so pervasive that they were considered part of the language itself and having lost their metaphoric quality. An exhaustive list of these terms would be several pages in length but a small sampling is offered:

Access	Consume	Equal
Against	Core	Focus
Attack	Create	Force
Build	Credit	Forefront
Call(s)	Design	Foundation
Claim	Develop	Framework
Collect	Direct	Fresh
Community	Draw	Frequency
Compete	Elements	(dys)function

Gain
Guard
Hold
Impact
Incorporate
Introduce
Key
Lead
Merge
Oppose
Out-weigh
Overrun
Pathway(s)
Perform
Price
Produce
Provide
Protect
Pursue
Push
Release
Scope
Screen
Search
Seek
Select
Shape
Shield
Shift
Seamless
Step(s)
Stovepipe
Strive
Take(back)
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